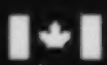
Action Towards Healthy Eating...

Canada's Guidelines for Healthy Eating and Recommended Strategies for Implementation



Canada

Action Towards Healthy Eating...

Canada's Guidelines for Healthy Eating and Recommended Strategies for Implementation

The Report of the Communications/ Implementation Committee

Published by authority of the Minister of National Health and Welfare

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1.
Executive Summary and Recommendations for Action

Optimal health for Canadians can only be achieved when greater efforts are made in health promotion and prevention of illness and when nutrition is an integral part of these efforts. A healthier population opts for a diet that promotes good health and that lowers the risk of chronic disease. While some controversy still exists about what constitutes a healthful diet, the nutritionally optimum diet is a concept that is more understood. The Scientific Review Committee (SRC) has provided an updated interpretation of the scientific evidence that defines a healthful diet for Canadians in the form of updated nutrition recommendations, including recommended nutrient intakes for Canadians. The SRC Nutrition Recommendations are intended to help Canadians select a dietary pattern that will supply recommended amounts of all essential nutrients while reducing the risk of chronic disease.

The Communications/Implementation Committee identified many gaps between estimated current consumption patterns and those recommended by the Scientific Review Committee. These gaps indicate nutrition problems for many Canadians whose dietary practices place them at greater risk of diet-related chronic diseases, such as heart disease and some types of cancer. To close these gaps, and thereby lower the risk of such diseases, Canadians must make changes in their diet, including lowering total and saturated fat, increasing complex carbohydrates and fibre, and reducing sodium, alcohol and caffeine. Water fluoridation programs are required in many communities.

The Nutrition Recommendations forwarded to the Communications/Implementation Committee (CIC) from the Scientific Review Committee were translated to make them more accessible to the public. The translation is based on focus-group research at the consumer level and advice from nutrition educators. The Communications/Implementation Committee recommends the following translation for communication and implementation to professionals and the public:

Canada's Guidelines for Healthy Eating

- *Enjoy a VARIETY of foods.*
- *Emphasize cereals, breads, other grain products, vegetables and fruits.*
- *Choose low-fat dairy products, lean meats, and foods prepared with little or no fat.*
- *Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.*
- *Limit salt, alcohol and caffeine.*

The Guidelines are directed at healthy Canadians over two years of age. Collectively, these statements make up the key nutrition message for healthy Canadians. The CIC recommends that further research be done to refine these messages for targeted sub-groups of the population such as low-literacy groups and ethnic groups.

The Committee also recommends revisions to *Canada's Food Guide* to reflect Canada's Guidelines for Healthy Eating. The revised guide should take a total diet approach which incorporates the wide range of foods that, although they are part of Canadian food patterns, are not recognized in the four food groups of the current guide.

The Communications/Implementation Committee recommends that many strategies be used for implementing Canada's Guidelines for Healthy Eating. There is a need to go beyond providing nutrition information to Canadians about what constitutes a healthy diet. Comprehensive and coordinated efforts must be made using a range of strategies. These strategies include:

- development of food and nutrition policies;
- collaboration and coordination among many partners;
- development of multisectoral, community-based nutrition intervention programs;
- creation of supportive environments in locations such as schools, worksites, restaurants and supermarkets, and through legislation and policy changes where appropriate; and
- increased efforts in nutrition research and surveillance.

The communication and implementation of Canada's Guidelines for Healthy Eating depends on commitments and partnerships at many levels, including governments, food and related industries, nutrition and other health professionals, non-governmental and community health organizations and the public. Responsibility for and commitment to the Guidelines and the Recommendations, as well as their communication and implementation, rests with all of these groups.

The Recommendations for Action are based on extensive Committee deliberations and large-scale consultations with representatives of the groups to whom the Recommendations are directed. Successful implementation of the Recommendations for Action depends on sustained partnerships and long-term commitment from the Department of National Health and Welfare to facilitate coordinated implementation.

The Recommendations of the Communications/Implementation Committee are aimed at the following sectors: the Department of National Health and Welfare and other federal government departments; provincial, territorial and municipal governments; nutrition and other health professionals and their organizations; the food industry; the food services sector; non-governmental organizations; and the public.

The Committee developed core recommendations that are directed at all of these sectors, as well as specific recommendations for each.

A. Core Recommendations for Action to all sectors

A1 Initiate coordinated national food and nutrition policy, linking nutrition and health with agriculture, education, fitness, fisheries, social services, environment and other relevant sectors.

A2 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to and implementation by the healthy public over two years of age.

A3 Integrate Canada's Guidelines for Healthy Eating into nutrition programs and materials.

A4 Develop and ensure continued availability of targeted nutrition programs and materials to meet the needs of the population, taking into account sociodemographic and cultural characteristics.

A5 Initiate intersectoral initiatives to develop community-based nutrition programs to promote and support implementation of Canada's Guidelines for Healthy Eating, which include school, workplace, mass-media and point-of-purchase intervention programs.

A6 Initiate intersectoral cooperation to develop guidelines on the dissemination of health information associated with the sale of food products.

A7 Increase research efforts and support a national nutrition surveillance and monitoring system.

A8 Review the Nutrition Recommendations and Communications/ Implementation Strategies every five years.

B. Recommendations for Action to the Department of National Health and Welfare

B1 Provide leadership for coordinating national implementation of the recommendations for action contained in the Report of the Communications/ Implementation Committee.

B2 Establish a Coordinating Group for Intersectoral Implementation of Canada's Guidelines for Healthy Eating that reports to the Minister of National Health and Welfare. Group members should include representatives from nutrition and other health professional organizations, food and related industries, non-governmental organizations, other government departments and the public.

B3 Review, in collaboration with these partners, the Nutrition Recommendations and the Communications/Implementation Strategies every five years.

B4 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to the healthy public over two years of age.

B5 Advocate for and coordinate efforts in federal, provincial, territorial, and municipal governments to develop coordinated food and nutrition policy linking nutrition and health with agriculture, education, fisheries, fitness, social services, environment and other relevant sectors.

B6 Strengthen communication and cooperation on nutrition and health policy, program development and implementation within the Department of National Health and Welfare.

B7 Strengthen communication and coordination on issues of nutrition and food among the departments of National Health and Welfare, Agriculture, Consumer and Corporate Affairs, Fisheries and Oceans, and National Defence.

B8 Assess and revise, where necessary, public policy in areas such as free trade, sales tax reform, pesticide review, food commodity pricing and land use in order to support implementation of Canada's Guidelines for Healthy Eating.

B9 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products and initiate needed legislative or policy revisions in support of these guidelines.

B10 Advocate for appropriate changes to the *Canadian Agricultural Products Act* to allow for development of low-fat, standardized dairy and meat products.

B11 Advocate changes to dairy-product legislation to make available lowered-fat and altered-fat products in all provinces.

B12 Advocate to Agriculture Canada and provincial counterparts for nutrition as a primary determinant in agricultural food-product development.

B13 Advocate to the food industry for nutrition as a primary determinant in food-product development.

B14 Support community-based nutrition initiatives by allocating substantial financial resources for large-scale demonstration projects in community nutrition; small-scale innovations; and the transfer of effective programs to other communities and agencies.

B15 Develop, in consultation with the provinces and territories, enabling systems supportive of community action on nutrition — including incentive grants, training, consultative services and communications mechanisms.

B16 Revise *Canada's Food Guide*, incorporating the recommendations of the Task Group and the Technical Group on *Canada's Food Guide*. The revised food guide should be based on a total diet approach which incorporates Canada's Guidelines for Healthy Eating and reflects the Nutrition Recommendations.

B17 Provide financial resources and collaborate with partner sectors to generate baseline and ongoing national data on the nutritional status and food consumption of Canadians.

B18 Encourage evaluation of nutrition and health promotion programs through funding.

B19 Monitor the effectiveness of the nutrition labelling program in assisting the public to act on Canada's Guidelines for Healthy Eating. Revise if needed.

B20 Develop a protocol that can be used by different sectors for regular monitoring of awareness of, and compliance with, Canada's Guidelines for Healthy Eating.

B21 Actively disseminate and publicize widely research results and implications as they relate to the implementation of Canada's Guidelines for Healthy Eating.

B22 Provide funding, through the National Health Research and Development Program, for nutrition research in support of the implementation of Canada's Guidelines for Healthy Eating.

C. Recommendations for Action to provincial, territorial and municipal governments

C1 Provide leadership for coordinating provincial, territorial and municipal implementation of the recommendations for action contained in the Report of the Communications/Implementation Committee.

C2 Establish a Coordinating Group for Intersectoral Implementation of Canada's Guidelines for Healthy Eating. Group members should include representatives from nutrition and health professional organizations, food and related industries, non-governmental organizations, other government departments and the public.

C3 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to the healthy public over two years of age.

C4 Develop coordinated food and nutrition policy linking nutrition and health with agriculture, education, fisheries, fitness, social services, environment and other relevant sectors.

C5 Incorporate Canada's Guidelines for Healthy Eating into programs, policies, legislation, media campaigns, etc. as appropriate, taking into account the needs of the local population.

C6 Review staffing levels in community health services to achieve a minimum ratio of one public health nutritionist per 50 000 population.

C7 Develop plans, programs and policies to implement Canada's Guidelines for Healthy Eating, taking into account the sociodemographic and cultural needs of the population.

C8 Provide funding and cooperate with the Department of National Health and Welfare to generate baseline and ongoing data on the nutritional status and food consumption of Canadians.

C9 Support evaluation of nutrition and health promotion programs through funding.

C10 Encourage the development of strategic grants to fund research in support of implementation of Canada's Guidelines for Healthy Eating.

C11 Fully integrate nutrition into curricula at all levels in the formal education system, including teacher education programs.

C12 Ensure that foods served in Canadian schools are consistent with Canada's Guidelines for Healthy Eating.

C13 Initiate coordinated, comprehensive food and nutrition policies in schools.

C14 Ensure municipal water contains fluoride at levels no less than 1 mg per litre.

C15 Examine social assistance allowances, and adjust where necessary, to ensure that recipients can achieve Canada's Guidelines for Healthy Eating.

C16 Change dairy product legislation, where restricted by law, to make available lowered-fat and altered-fat food products.

C17 Make nutrition a primary determinant in agricultural food-product development.

C18 Promote provincial food products based on their nutritional benefits.

D. Recommendations for Action to nutrition and other health professional organizations

D1 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to the healthy public over two years of age.

D2 Promote Canada's Guidelines for Healthy Eating and their implementation to members (through journals, newsletters, continuing education, annual meetings, etc.).

D3 Stimulate discussion by and active participation of members at the national, provincial and community level to implement Canada's Guidelines for Healthy Eating.

D4 Coordinate efforts with other partners to ensure the communication of a consistent message about diet and health.

D5 Work with the public and private sectors and voluntary health agencies to develop and support nutrition policy at the national, provincial, territorial and community levels.

D6 Place greater emphasis on nutrition in health promotion and disease prevention in education and continuing professional education programs for nutritionists and other health professionals.

D7 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

D8 Advocate for and support efforts to develop provincial, territorial and local nutrition policies in schools.

D9 Advocate for nutrition as a primary determinant in institutional and commercial food service.

D10 Advocate to Agriculture Canada and provincial counterparts for nutrition as a primary determinant in agricultural food-product development.

D11 Advocate to the food industry for nutrition as a primary determinant in food-product development.

D12 Generate data on awareness of and compliance with Canada's Guidelines for Healthy Eating, where health survey and research opportunities exist.

D13 Advocate to the public and private sectors to undertake research in support of the implementation of Canada's Guidelines for Healthy Eating.

E. Recommendations for Action to nutrition and other health professionals

E1 Encourage the implementation of Canada's Guidelines for Healthy Eating through advocacy for local policies (for example, municipal, worksite and school board policies).

E2 Implement Canada's Guidelines for Healthy Eating in the agencies and settings in which they are employed in an effort to provide healthy clients with a consistent nutrition message.

E3 Involve community leaders, the private sector and potential clients in integrating Canada's Guidelines for Healthy Eating into local programs (for example, programs for low-literacy groups and ethnic subgroups).

E4 Initiate partnerships (for example, with community or church groups, and with worksite representatives) in the design, implementation and evaluation of community-based nutrition intervention programs.

E5 Advocate for the integration of a nutrition component into all relevant community health programs.

F. Recommendations for Action to the food industry

F1 Develop and incorporate company nutrition policies that encourage the production and promotion of food products and menu plans consistent with Canada's Guidelines for Healthy Eating.

F2 Develop products low in total fat and energy and high in micronutrients. This would have greatest impact in dairy and bakery products and snack foods categories.

F3 Reduce the use of salt and sodium-based ingredients in food processing.

F4 Moderate the incorporation of trans-fatty acids into food products.

F5 Conduct promotional campaigns consistent with Canada's Guidelines for Healthy Eating.

F6 Support the efforts of health or nutrition organizations that are communicating Canada's Guidelines for Healthy Eating.

F7 Expand active partnerships in nutrition education and promotion activities with health professionals and non-governmental health organizations.

F8 Expand the use of voluntary nutrition labelling to as many products as possible.

F9 Promote products on their nutritional benefits, using Canada's Guidelines for Healthy Eating to encourage customers to read nutrition labels.

F10 Use labels and advertising to recommend smaller portions of high-fat foods.

F11 Use low-fat ingredients in label or promotional recipes, menu plans and serving suggestions.

F12 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

F13 Conduct research and development activities to help create products that are low in total fat, saturated fat and cholesterol, and high in complex carbohydrates and fibre.

F14 Participate in nutrition monitoring research with other sectors.

G. Recommendations for Action to the food services sector

G1 Develop a nutrition policy that establishes nutrition as a primary determinant in food purchasing and product development.

G2 Provide food choices for consumers that are low in total fat, saturated fat and cholesterol and high in complex carbohydrates and fibre in restaurants, cafeterias and vending machines.

G3 Use non- or low-fat cooking methods in food preparation wherever possible.

G4 Limit the use of salt in food preparation.

G5 Emphasize menu items that are high in complex carbohydrates and low in total fat.

G6 Provide nutrition education to chefs, cooks, wait staff and other food services personnel to assist them in the implementation of Canada's Guidelines for Healthy Eating.

G7 Integrate nutrition education into formal training programs for food service managers, chefs, cooks, etc.

G8 Provide nutrition information to consumers about the nutritional value of foods served.

G9 Use menus and promotional materials to encourage food selection consistent with Canada's Guidelines for Healthy Eating.

G10 Initiate partnerships (for example, with school, worksite and hospital representatives, and with nutrition and other health professionals) in the design, implementation and evaluation of community-based nutrition intervention programs.

G11 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

H. Recommendations for Action to non-governmental organizations (such as the National Institute of Nutrition, PARTICIPaction, the Canadian Cancer Society, and the Heart and Stroke Foundation of Canada)

H1 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to the healthy public over two years of age.

H2 Mobilize members and volunteers to promote Canada's Guidelines for Healthy Eating.

H3 Ensure adequate professional support for nutrition programs.

H4 Initiate partnerships (for example, with school, worksite, hospital and private sector representatives and with nutrition and other health professionals) in the design, implementation and evaluation of community-based nutrition intervention programs.

H5 Work with the public and private sectors and health professional organizations to develop and support nutrition policy at the national, provincial, territorial and community levels.

H6 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

H7 Support evaluation of nutrition and health promotion programs through funding.

H8 Support research on the relationship between diet and chronic diseases.

H9 Advocate to Agriculture Canada and provincial counterparts for nutrition as a primary determinant in agricultural food-product development.

H10 Advocate to the food industry for nutrition as a primary determinant in food-product development.

L Recommendations for Action to the public

I1 Adopt Canada's Guidelines for Healthy Eating for those over two years of age.

I2 Influence family, friends and co-workers to adopt Canada's Guidelines for Healthy Eating, and support them in their efforts to do so.

I3 Advocate for financially, geographically and culturally accessible food choices consistent with Canada's Guidelines for Healthy Eating in locations such as supermarkets, schools, workplaces and restaurants.

I4 Advocate for food and nutrition policies in the community and at a national level that support Canada's Guidelines for Healthy Eating.

I5 Advocate for availability of and accessibility to nutrition programs in the community.

If the Guidelines are to be implemented successfully, each of these sectors must accept to act on the Recommendations for Action. Ultimately, the Canadian population will consume a more healthful diet and, as a result, enjoy a healthier life.

2.
Introduction

In response to consumer demand for information on diet and health, interest in dietary guidelines and nutrition recommendations has blossomed in the last decade. As a result of this interest, there have been many versions of dietary guidelines in Canada since the release in 1977 of Health and Welfare Canada's *Nutrition Recommendations for Canadians* (Murray and Rae, 1979).

The proliferation of dietary guidelines from a wide array of government and non-governmental organizations was but one example of the lack of coordination in the design and delivery of nutrition messages, programs and materials in Canada. These conflicting messages caused confusion about diet and health among consumers and health professionals alike.

A meeting convened by the National Institute of Nutrition in 1986 identified the need for one common set of nutrition recommendations as a first step in developing a coordinated national policy on nutrition. During the course of the meeting, representatives of 12 organizations, including government, voluntary health organizations and professional associations, discussed the need for cooperation in producing nutrition recommendations that would be acceptable to all.

In 1987, the Minister of National Health and Welfare appointed two committees — the Scientific Review Committee (SRC) and the Communications/Implementation Committee (CIC). These committees were charged with reviewing and revising the Nutrition Recommendations for the healthy Canadian population. The aim was to provide up-to-date nutrition recommendations for professionals and the public which would promote and maintain health while reducing the risk of nutrition-related diseases.

The Scientific Review Committee reviewed the scientific evidence, from a public health perspective, for revising the Nutrition Recommendations. The Report of the Scientific Review Committee presents the updated Nutrition Recommendations and their scientific rationale.

The Communications/Implementation Committee translated the updated Nutrition Recommendations for the public and recommended ways to communicate and implement them in the Report of the Communications/Implementation Committee. Together, the reports of these two committees are an important first step in the establishment of a national nutrition policy.

3.
Purpose of the Report

The Report of the Communications/ Implementation Committee presents comprehensive strategies for communicating and implementing the Nutrition Recommendations suggested in the Report of the Scientific Review Committee, including a translation of the updated Nutrition Recommendations for communication to the public. It emphasizes nutrition as an important component in efforts to promote and maintain health.

The Report contains:

- Canada's Guidelines for Healthy Eating, which represent the translation of the updated Nutrition Recommendations into dietary advice for the public;
- a description of current nutrition practices of the population and gaps between current and recommended practices;
- an analysis of existing nutrition activities, programs, methods and materials, including *Canada's Food Guide*, that are directed to the public;
- a description of opportunities and challenges for implementation;
- a description of the existing infrastructure for implementing Canada's Guidelines for Healthy Eating;
- a description of key examples of current nutrition intervention programs; and
- recommendations for action to nutrition and other health professionals, governments, food and related industries, non-governmental health organizations and the public.

Representatives of the above-mentioned sectors were consulted in the preparation of this report and are important partners in the implementation of Canada's Guidelines for Healthy Eating.

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Details of the mandate and procedures used by the CIC are contained in Appendix A.

5.
Recommendations by the Scientific Review Committee

Recommendations by the SRC are the result of an in-depth review of the literature on nutrient requirements and the relationships between diet, nutrition and health. "They are intended to provide guidance in the selection of a dietary pattern that will supply recommended amounts of all essential nutrients while reducing the risk of chronic diseases. Although the recommendations are presented as individual entities, it is stressed that they will be fully effective only when applied as a unit. It is also important to appreciate that the recommendations are not a prescription and they can be satisfied by many combinations of available foods without any general need for supplements."

The Scientific Review Committee adopted the following key statements as Recommendations:

Nutrition Recommendations for Canadians

- *The Canadian diet should provide energy consistent with the maintenance of body weight within the recommended range.*
- *The Canadian diet should include essential nutrients in amounts specified in the Recommended Nutrient Intakes.*
- *The Canadian diet should include no more than 30% of energy as fat (33 g/1000 kcal or 39 g/5000 kJ) and no more than 10% as saturated fat (11 g/1000 kcal or 13 g/5000 kJ).*
- *The Canadian diet should provide 55% of energy as carbohydrates (138 g/1000 kcal or 165 g/5000 kJ) from a variety of sources.*
- *The sodium content of the Canadian diet should be reduced.*
- *The Canadian diet should include no more than 5% of total energy as alcohol, or two drinks daily, whichever is less.*
- *The Canadian diet should contain no more caffeine than the equivalent of four cups of regular coffee per day.*
- *Community water supplies containing less than 1 mg/litre should be fluoridated to that level.*

The Recommendations are directed at the healthy population over two years of age. The Executive Summary of the Report of the Scientific Review Committee is contained in Appendix B.

6.
Canada's Guidelines for Healthy Eating: A Translation of the SRC Recommendations

The goal of the Nutrition Recommendations is to give guidance to professionals and the public about what constitutes a healthful diet. In order for these recommendations to be acted upon and implemented, they must first be understood by the public.

Based on several sources of information, including expert advice and a thorough review of the literature and focus group research of Canadian consumers, the Communications/Implementation Committee suggests that the Nutrition Recommendations of the Scientific Review Committee be communicated to the public as follows:

Canada's Guidelines for Healthy Eating

- *Enjoy a VARIETY of foods.*
- *Emphasize cereals, breads, other grain products, vegetables and fruits.*
- *Choose low-fat dairy products, lean meats, and foods prepared with little or no fat.*
- *Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.*
- *Limit salt, alcohol and caffeine.*

Several principles guided the translation of the SRC Recommendations. Among these are scientific accuracy, a positive tone, an action-oriented approach, and a level of language understood by the majority of Canadians.

A2 The Communications/Implementation Committee recommends that all sectors adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to and implementation by the healthy public over two years of age.

The Guidelines are directed at healthy Canadians over two years of age. Collectively, these statements make up the key nutrition message for healthy Canadians. While the above Guidelines are the key translation of the SRC Nutrition Recommendations, the CIC recommends further market testing on nutrition messages for specific target groups, such as low-literacy groups and ethnic sub-populations. In addition, specially targeted campaigns will be needed to reach particular segments of the Canadian population. The CIC recommends further research aimed at refining nutrition messages for these segments and determining consumer awareness and understanding of the Guidelines.

7.
Review of Canada's Food Guide

The CIC was asked specifically to review *Canada's Food Guide* (originally known as *Canada's Food Rules*), which has been the cornerstone of nutrition education in Canada for nearly 50 years. *Canada's Food Guide* was developed to translate nutrient requirements into foods and to provide a simple guide for consumers in selecting foods that are likely to ensure nutritional adequacy, that is, to prevent diseases caused by nutrient deficiency. (Health and Welfare, 1982a). The major health concerns facing Canadians today are obesity and diet-related chronic diseases such as heart disease and cancer, in which excessive food and nutrient intake is the issue. This shift from nutrient deficiency diseases to nutrition-related health problems has prompted the need to re-evaluate nutrition education tools and programs.

In its review of *Canada's Food Guide*, the CIC received assistance from the Task Group on *Canada's Food Guide* and the Technical Group on *Canada's Food Guide*. (The recommendations of these two groups are contained in Appendix C and D, respectively.) The Report of the Task Group on *Canada's Food Guide* contains a comprehensive discussion of the literature and information provided by a wide range of groups and individual nutritionists and other educators. A thorough analysis of these sources of information led the reviewers to conclude that a key nutrition education tool like *Canada's Food Guide* is still necessary, but that significant revisions should be made to the Guide to reflect the nutrition concerns of Canadians today. *Canada's Food Guide* was designed as a guide for a foundation diet; that is, a diet that contained the minimum amount of foods required to ensure that nutrient requirements for most people would be met. It did not consider the need for people to limit certain nutrients or foods, nor did it take into account the wide variety of manufactured, processed or combination food dishes that characterize the contemporary Canadian diet. Many nutrition educators have called for revisions to the Guide, such as integrating the Nutrition Recommendations into the Guide, including foods that do not fit into any of the four food groups, and changing the name and visual presentation of the Guide. The Communications/Implementation Committee accepted the Recommendations of the Task Group on *Canada's Food Guide*, which call for a revised guide to be based on a total diet approach. This approach allows the Nutrition Recommendations to be incorporated into the Guide, thus making it meaningful not only as a tool for lowering the risk of nutrient deficiencies but also for promoting a diet that reduces the risk of chronic disease. This approach also permits the wide array of foods consumed by Canadians to be addressed in the Guide, and not just those basic foods that fit into the four food groups.

The Report of the Technical Group on *Canada's Food Guide* contains a detailed analysis of the changes required for a total diet approach to the revised Guide. The Report examines types and numbers of food groups, with nutrient analyses, to ensure that the updated SRC Nutrition Recommendations and the updated Recommended Nutrient Intakes for Canadians are reflected.

The Recommendations of the Technical Group on *Canada's Food Guide* were accepted by the CIC. These recommendations, together with the background report, provide detailed information on developing a revised food guide for Canadians.

Because of the widespread use of *Canada's Food Guide* in virtually all nutrition education programs across Canada, the recommendations for changes to the Guide require urgent attention. A revised guide, based on the total diet approach, will be a major tool for communicating and translating the SRC Nutrition Recommendations into terms that can be acted upon.

B16 In summary, the CIC recommends that the Department of National Health and Welfare revise *Canada's Food Guide*, incorporating the recommendations of the Task Group and the Technical Group on *Canada's Food Guide*. The revised food guide should be based on a total diet approach which incorporates Canada's Guidelines for Healthy Eating and reflects the Nutrition Recommendations.

8.
The Current Situation

This section describes the environment for the communication and implementation of Canada's Guidelines for Healthy Eating. It contains a review of the current situation in Canada with respect to the following:

- nutrition recommendations and dietary guidelines that are currently being used;
- estimates of current food consumption and gaps between recommended and current practices;
- opportunities and challenges for communicating and implementing Canada's Guidelines for Healthy Eating; and
- the existing infrastructure for communicating and implementing Canada's Guidelines for Healthy Eating.

Current Recommendations and Guidelines

At the present time, consumers are hearing about nutrition recommendations and dietary guidelines from a wide variety of sources. Table 1 lists the nutrition recommendations, dietary guidelines and position papers currently promoted by the federal government and national organizations. This list should be regarded as a representative survey of guidelines of this type that exist in Canada. However, provincial and local guidelines are used in many parts of the country. Canadians are also exposed to recommendations concerning diet and nutrition from the United States through the media.

To avoid confusion and unnecessary duplication of efforts,

A2 the Communications/Implementation Committee recommends that all sectors adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to and implementation by the healthy public over two years of age.

Estimated Food Consumption

The Report of the Task Group on Food Consumption (see Appendix E for Executive Summary) contains the details of the analysis of recent food consumption patterns. Lack of recent national food intake and nutritional status data were serious constraints for this analysis. There has been no national study of food intake or nutritional status since the Nutrition Canada Survey of 1970-72 (Health and Welfare Canada, 1973). The data available for the analysis included Apparent Per Capita Food Consumption data, which are collected annually by Statistics Canada from supply and disposition balance sheets, and Family Food Expenditure data (Statistics Canada, 1985; 1986; 1989) which are collected every two to four years by Statistics Canada, the most recent available survey being that conducted in 1986. These two sources of data provide only gross estimates of food consumption, the former considering national data on disappearance of food[1] and the latter reflecting household food purchases. Neither source of data reflects actual consumption of foods by individuals. The

1 By subtracting data on exports, ending stocks, non-food use and manufacturing (disposition) from data on production, imports and beginning stocks (supply), the amounts of basic foods available to Canadians in a given year, and the changes in these amounts over time, can be determined.

Table 1

Summary of Dietary Recommendations for the Canadian Public

Organization	Report/Release	Purpose of Recommendations	Energy	Carbohydrates	Total fat/ Specific lipid	Other
Health and Welfare Canada	Nutrition Recommendations for Canadians, 1977[a]	maintain and improve the health of Canadians	reduce energy consumption and/or increase expenditure as required for individuals to prevent obesity		reduce to 35% of energy intake include a source of polyunsaturated fatty acid (linoleic)	nutritionally adequate diet as outlined in *Canada's Food Guide*
Heart and Stroke Foundation of Canada	public education programs piloted in various settings across Canada from 1988 *Lighthearted Cookbook*, 1988[b]	prevent cardiovascular disease	maintain healthy weight	consume more complex carbohydrate foods for nutrients and fibre	limit to 30% of energy limit saturated fat to 10% of energy limit intake of high-cholesterol foods	limit alcoholic beverages to one per day reduce excess sodium intake ensure variety in the diet consume 15% of energy as protein
Canadian Concensus Conference on Cholesterol	Final report, 1988[c]	reduce risk of heart and vascular disease by altering serum cholesterol and lipoprotein risk factors for the healthy population			limit to 30% of energy limit saturated fat to 10% of energy	
Osteoporosis Society of Canada	The Importance of Calcium in Osteoporosis Prevention: Official Position, 1988[d]	prevent osteoporosis				support current recommended nutrient intake (Health and Welfare Canada) for calcium
Canadian Cancer Society	national conference on diet and cancer reported by the media in 1987	may reduce the risk of some cancers through dietary means	maintain ideal weight		limit to 30% of energy	restrict alcoholic beverages to two or fewer daily

Table 1 (continued)

Organization	Report/Release	Purpose of Recommendations	Energy	Carbohydrates	Total fat/ Specific lipid	Other
	public education and media campaign, 1985 to the present *Smart Cooking*, 1986[e] updated recommendations released 1987 Proceedings of the First National Conference on Diet and Cancer, 1989[f]					eat more foods containing fibre and several servings of fruits and vegetables daily support the recommendations of the Expert Advisory Committee on Dietary Fibre, Health and Welfare Canada, 1985 minimize consumption of smoked, nitrate-cured and salted foods
Expert Advisory Committee on Dietary Fibre, Health and Welfare Canada	Report of the Expert Advisory Committee on Dietary Fibre, 1985[g]	advocate an adequate level of dietary fibre consumption		increase the total amount of foods containing fibre to achieve 50% or more of dietary energy from carbohydrates		select higher-fibre foods to achieve doubling of dietary fibre intake (to 25-30 grams daily)
Canadian Dental Association	Policy Statement on Controlled Water Fluoridation, 1981[h]	prevent tooth decay				add fluoride to controlled water to optimum levels for the prevention of tooth decay
Canadian Consensus Conference on Non-Pharmacological Approaches to the Management of High Blood Pressure	Recommendations, 1989[i]	prevent high blood pressure	aim for body mass index (BMI) of 20-27			reduce intake of salt and continue a diet rich in potassium restrict alcoholic beverages to two standard drinks per day
Canadian Dietetic Association	Diet and Cancer Prevention: Official Position, 1987[j]	reduce risk of certain cancers through dietary means	avoid over-consumption of energy		limit to 30% of energy	consume generous amounts of whole-grain foods, legumes, vegetables and fruits

Table 1 (continued)

Organization	Report/Release	Purpose of Recommendations	Energy	Carbohydrates	Total fat/ Specific lipid	Other
Canadian Dietetic Association	Toward Healthy Blood Cholesterol Levels: Official Position, 1988[k]	achieve healthy blood cholesterol levels and reduce risk of cardiovascular disease	achieve and maintain healthy body fat level	continue emphasis toward greater than 50% of energy from carbohydrates with emphasis on complex carbohydrates, through generous amounts of legumes, fruits, vegetables and whole-grain foods	limit to 30% of energy limit saturated fat to 10% of energy and no recommended change or PUFA at 10% of energy at the recommended fat intake, cholesterol intake was assumed to be about 400 mg/day and deemed acceptable	
Canadian Dietetic Association	The Role of Diet in the Prevention of Hypertension: Official position, 1989[l]	facilitate reduction in health risks associated with hypertension through dietary means	achieve and maintain healthy body fat level		consume only moderate amounts of sodium consume alcohol in moderation, if at all (30 mL/day)	

Sources:

a T.K. Murray and J.R. Rae, "Nutrition Recommendations for Canadians", *Canadian Medical Association Journal* 120(1979):1241-1242.

b A. Lindsay, *The Lighthearted Cookbook* (Toronto: Key Porter Books, 1988).

c "Canadian Consensus Conference on Cholesterol: Final Report", *Canadian Medical Association Journal* 139 (December 1988 suppl.).

d T.M. Murray, "The Importance of Calcium in Osteoporosis Prevention: Official Position of the Osteoporosis Society of Canada", *Bulletin for Physicians*: 1 (1988).

e A. Lindsay, *Smart Cooking* (Toronto: Macmillan of Canada, 1986).

f Canadian Cancer Society, *Proceedings of the First National Conference on Diet and Cancer, May 8-9, 1987, Montreal, Canada* (Toronto: C.C.S., 1989).

g Health and Welfare Canada, *Report of the Expert Advisory Committee on Dietary Fibre* (Ottawa: Health Protection Branch, 1985).

h "Canadian Dental Association Policy Statement on Controlled Water Fluoridation", *Canadian Dental Association Journal* (February 1981).

i *Canadian Consensus Conference on Non-Pharmacological Approaches to the Management of High Blood Pressure — Recommendations* (Ottawa: Canadian Coalition for High Blood Pressure Prevention and Control, 1989).

j "Diet and Cancer Prevention: Official Position of the Canadian Dietetic Association", *Journal of the Canadian Dietetic Association* 48 (Summer 1987):144.

k "Toward Healthy Blood Cholesterol Levels: A Dietary Approach — Official Position of the Canadian Dietetic Association", *Journal of the Canadian Dietetic Association* 49 (Fall 1988):216-228.

l "The Role of Diet in the Prevention of Hypertension: Official Position of the Canadian Dietetic Association", *Journal of the Canadian Dietetic Association* 50 (Winter 1989):12.

conclusions reached about gaps between desirable and present consumption patterns must be viewed in the context of these limitations. Some market research data were also used to estimate food consumption patterns of Canadians.

B17 The Communications/Implementation Committee recommends that the Department of National Health and Welfare provide financial resources and collaborate with partner sectors to generate baseline and ongoing national data on the nutritional status and food consumption of Canadians.

More research is required to determine whether the goals established in the updated Nutrition Recommendations are met.

The updated Nutrition Recommendations of the Scientific Review Committee suggest that the Canadian diet should supply:

- essential nutrients in the amounts specified in the updated Recommended Nutrient Intakes (RNIs);
- sufficient energy to maintain a healthy weight when balanced with physical activity (energy intakes for adults should not be lower than 1800 kilocalories in order to meet RNIs);
- no more than 30% of energy as fat and no more than 10% of energy as saturated fat;
- at least 55% energy as carbohydrates;
- less sodium than is now used;
- no more than 5% of energy as alcohol, or 2 drinks per day (whichever is less), with no alcohol during pregnancy;
- no more caffeine than the equivalent of four regular cups of coffee per day; and
- water containing no less than 1 mg/litre of fluoride.

Canada's food supply abounds in the nutrients required for a healthful diet. Ideally, Canadians should aim for a daily energy intake of at least 1800 kcal that would provide all of the essential nutrients without the use of supplements. Data on household food purchases indicate that Canadians, on average, purchase foods that supply nutrients at levels that meet the Recommended Nutrient Intakes for calcium, iron, phosphorus, potassium, vitamin A, vitamin C, thiamin, riboflavin, niacin and folacin. In spite of this, some Canadians do not consume foods that contain required nutrients in the recommended amounts. The extent of nutrient deficiencies in the Canadian population remains to be studied.

Data from the 1986 Family Food Expenditure Survey (Statistics Canada, 1989) indicate that the average per capita energy intake exceeds 1800 kcal (7.6 MJ) daily. Bakery products and fats and oils are the major sources of energy in the diet, with foods consumed away from home also being a major source.

The Scientific Review Committee did not recommend specific levels of physical activity; however, it acknowledged the importance of activity in maintaining a healthy body weight. The Campbell's Survey on Well-Being in Canada (Canadian Fitness and Lifestyle Research Institute, 1989), which followed up on the 1981 Canada Fitness Survey (Canada Fitness Survey, 1983), reported a significant increase in the proportion of Canadians who are physically active. Three-quarters of Canadians spend an average of three hours per week during at least nine months of the year doing some form of physical activity. The study estimated that one-third of this group were active enough to receive health benefits as a result.

Although these results are encouraging, overweight and obesity are still major health problems in Canada. A significant proportion (20 to 30%) of the adult population are at increased risk of developing health problems due to excess weight according to the Body Mass Index (BMI). Five to 25% of children are also in the "at risk" category (Health and Welfare Canada, 1988a).

On average, protein makes up 15% of the total energy intake, a figure which is at the upper end of recommended levels. Two-thirds of the protein in foods purchased by Canadians are from animal sources. Bakery products are also a major source of protein.

Canadians appear to consume, on average, a higher percentage of fat than recommended. Current levels are estimated at approximately 38% of total energy, which is well above the recommended level of 30%. There has, however, been a trend toward lower proportions of energy derived from fat since the 1974 Family Food Expenditure Survey (Statistics Canada, 1977), which found that the average proportion of energy contributed by fat was over 43.5%. The proportion of fat from vegetable sources is increasing in relation to total fat intake, whereas animal sources of fat have been declining in popularity. Although the average level of saturated fats is falling, it is currently estimated at 13% of total energy intake, which exceeds the recommended level of 10%. The average amount of cholesterol in foods purchased is estimated at 442 mg per day, per person. Total and saturated fat levels in the Canadian diet need to be significantly reduced to meet the recommendation for no more than 30% of energy from total fat and no more than 10% energy from saturated fat.

The average carbohydrate intake has increased since 1974 and is estimated to be 48% of total energy intake, compared to the recommended level of 55%. Cereal products (including breakfast cereals, flour, rice, other grains, cake mixes and pasta) and bakery products (including bread, cookies, doughnuts, cakes and pies) made up half of the carbohydrates in foods purchased by Canadians in 1986. Increased consumption of vegetables, fruits, softdrinks and alcohol also contributed to the increased proportion of energy from carbohydrates. The updated Nutrition Recommendations emphasize the need to increase complex carbohydrate intake and fibre consumption.

Sodium intake is difficult to document; however, disappearance data indicate that there has been an apparent decrease in sodium consumption. It should be noted that disappearance data exclude discretionary use of salt at the table and salt used in food processing. Despite the apparent decrease, sodium intake is regarded as being well above required levels. One Montreal study (Mongeau *et al.*, 1989) estimated that adults consume 3.1 g of sodium per day (1.5 g, or 65 mmol, per 1000 kcal). The major sources of sodium are bakery products, miscellaneous foods, meat, fish and poultry and dairy products. About 5% of sodium comes from salt added at the table (Mongeau *et al.*, 1989). More efforts to reduce the use of sodium in food processing will have to be made.

Apparent consumption of alcohol increased from 1972, peaking in 1982 and then falling to levels just above those reported in 1972 (Statistics Canada). There has been a trend towards greater availability of wine and marginally lower availability of beer, ale, and distilled spirits. Statistics Canada data (Adrian *et al.*, 1989) indicate that total alcohol consumption in Canada has been on the rise since 1983-84, but that per capita consumption has been decreasing. In 1986, the consumption of alcohol was estimated at 10.5 litres per person over 15 years (the equivalent of 11.6 drinks per week or two drinks per day). A 1987 Gallup Poll (Adrian *et al.*, 1989) indicated that 78% of Canadian adults aged 18 years and over consume alcohol in some form. Just over half (54%) claim to consume five or more drinks at a single occasion, while 12% report drinking daily.

Average caffeine consumption has been estimated at 450 mg per day (National Institute of Nutrition, 1987). Gilbert (1981) estimated that Canadians obtain 60% of caffeine from coffee, 30% from tea, and 10% from cola beverages, cocoa products and medicines. The SRC recommended that caffeine intake not exceed the equivalent of four cups of regular coffee daily, the amount of caffeine in a cup of regular coffee being estimated at 100 mg (National Institute of Nutrition, 1987). Variations in caffeine content can occur from different brewing methods.

The most recent data (1976) on fluoridation of Canadian water indicated that only 37% of the Canadian population, and 46% of those with piped water systems, were consuming fluoridated water (Health and Welfare Canada, 1988b).

To summarize, the major gaps in current versus recommended practices appear to be in intakes of fat and complex carbohydrates. The updated recommendations from the Scientific Review Committee call for significant reductions in total fat and saturated fat intakes and increases in complex carbohydrates. Water fluoridation programs will also be required in some communities.

Opportunities and Challenges

Consumer Nutrition Awareness

The release of updated nutrition recommendations comes at a time of great interest in nutrition, diet and health on the part of Canadian consumers. A 1989 survey of grocery shoppers (Grocery Products Manufacturers of Canada, 1989) gauged consumer interest in dietary guidelines by asking shoppers to select from a list of fictitious news headlines those that they would read. Over one-third of shoppers reported they would definitely read a news story about "New Guidelines for Healthy Eating". Women were more likely than men to report an interest in dietary guidelines, as were older people compared to younger Canadians.

For the many Canadians who are already aware of the importance of diet for health, Canada's Guidelines for Healthy Eating will provide credible advice for dietary changes. For those who are less aware, more aggressive approaches are needed to raise awareness and to promote changes in Canadian food consumption patterns that reflect the Guidelines.

In past surveys on nutrition awareness, many consumers reported that they changed their food habits generally in response to suggestions made in the 1977 Nutrition Recommendations (Grocery Products Manufacturers of Canada, 1979, 1988; Health and Welfare Canada, 1979; Rae and Nielsen, 1980; Woolcott, 1982, 1989; Woolcott, Schwartz, and Lowry, 1988). The Campbell's Survey on Well-Being in Canada (Canadian Fitness and Lifestyle Institute, 1989) found that Canadians were eating more healthfully in 1988 than they had been in 1981, as indicated by their reports of food selection. For example, they were eating more fish and poultry, fruits and vegetables and consuming less red meat, fat, fried foods and salt. Women were more likely than men to report these changes. Nearly half of those surveyed (47%) reported believing that a good diet is important to health, and 56% said they watched their diet for health reasons. The older the respondent the more likely he or she was to respond positively to these statements. In Canada's Health Promotion Survey (Health and Welfare Canada, 1988c; 1989a) respondents were asked if there were any foods that should be limited or avoided for health reasons. Sixty-four percent of Canadians surveyed said yes. Women were more likely to say this, as were those under 65 years and those with post-secondary education. Foods high in cholesterol, fat, sugar, and salt were mentioned as examples of foods people should limit or avoid. Only 63% of Canadians agreed that some foods should be selected more often for health reasons. Fruits and vegetables were mentioned in this category by 49% of the respondents. The Health Promotion Survey found that regional, demographic and cultural differences emerged in the responses to these questions and concluded that health promotion programs must be targeted to local circumstances (Health and Welfare Canada, 1989a).

In the focus-group research (Creative Research Group, 1989) (see Appendix F for Summary Highlights), which was conducted in support of the Communications/Implementation Committee, everyone from the eight groups representing lower income adults across the country claimed to eat from the four basic food groups every day. Mothers appeared to be more concerned with what they fed their children than with what they ate themselves. Respondents also tended to report that they had changed their diets to consume less fat and more fruits and vegetables and to limit sugar.

The results of the analysis of estimated food consumption patterns and consumer awareness about nutrition paint a generally favourable picture in terms of the communication and implementation of Canada's Guidelines for Healthy Eating. Many Canadians appear to be aware of the connections between diet and health, and some have begun to make the necessary changes in their diet. Thus, some Canadians may already be eating healthfully according to the Guidelines. It is important to reinforce these habits rather than push for further dietary modifications that may not be necessary. On the other hand, there are many who are not aware of the impact of diet on health, and are not motivated to make changes in their eating habits. They should become the focus of programs designed to assist Canadians in making dietary changes. Many others simply do not know which

dietary changes are needed to lower the risk of disease. For example, the Nova Scotia Heart Health Survey (1987) found that although nearly everyone surveyed knew that blood-cholesterol levels affect health, less than half were aware that reducing the consumption of fatty foods may lower blood cholesterol.

In general, Canadians appear to be receptive to nutrition and health messages. However, the results of the focus-group research (Appendix F) indicate that the consumer's readiness to accept dietary change is a factor to consider. Regardless of the quality of their current nutrition habits, respondents were generally satisfied with them. The individuals most receptive to change appear to have higher levels of nutrition knowledge than those who are less interested in nutrition. However, even for the most knowledgeable, the message must be comprehensible, concrete and simple. For example, no one in the focus groups either understood or knew how to act on the statement, "Reduce your fat intake to thirty percent of calories." Individuals with the most limited knowledge about diet as it relates to health seemed more defensive about their ability to ensure good nutrition for their family. In light of these findings, initiatives for implementing Canada's Guidelines for Healthy Eating should capitalize on current consumer interest, while recognizing that there are many specific target groups for whom awareness and behaviour regarding nutrition conflict with the Guidelines. Accordingly, local efforts will be required to communicate and implement the Guidelines in appropriate ways.

To promote awareness and adoption of Canada's Guidelines for Healthy Eating,

The CIC recommends that the Department of National Health and Welfare and the partner sectors:

A3 Integrate Canada's Guidelines for Healthy Eating into nutrition programs and materials.

A4 Develop and ensure continued availability of targeted nutrition education programs and materials to meet the needs of the population, taking into account sociodemographic and cultural characteristics.

The CIC recommends that the Department of National Health and Welfare support the development of nutrition education programs and materials for use in the formal education system.

The CIC recommends that provincial, territorial and municipal governments:

C5 Incorporate Canada's Guidelines for Healthy Eating into programs, policies, legislation, media campaigns, etc. as appropriate, taking into account the needs of the local population.

C7 Develop plans, programs and policies to implement Canada's Guidelines for Healthy Eating, taking into account the sociodemographic and cultural characteristics of the population.

Demographic Realities

The changing demography of Canada has implications for the communication and implementation of Canada's Guidelines for Healthy Eating. Davey (1987) identified several potentially significant demographic trends for the next decade. The population will be older, better-educated and more ethnically diverse. There will be more households, but they will be smaller; and there will be more single-parent families.

Programs for communicating and implementing Canada's Guidelines for Healthy Eating should be targeted to these demographic groups in ways that meet their particular needs. For example, the greater importance of leisure time and the higher number of double-income families have led to increased sales in convenience foods. Efforts should be made to teach consumers to select convenience foods that are consistent with the

Guidelines and to encourage the food industry sectors to make nutrition a primary consideration in the development and production of food products.

Other social and lifestyle changes may also have an impact on food practices (Davey, 1987), and thereby on the implementation of Canada's Guidelines for Healthy Eating. Such changes include an increased flow of information, including food and nutrition information and dietary advice; greater emphasis on fitness and health; changing attitudes towards the use of alcohol and tobacco; and increased interest in environmental issues. These projected trends suggest that consumers will be receptive to the new Guidelines and that there is a potential for positive dietary behaviour changes. *The need to target programs to specific social and lifestyle subgroups in the population is re-emphasized.*

Health and Nutrition Inequities

The Canada Health Survey (Health and Welfare Canada, 1981) reported that low-income Canadians are at greater risk for nutrition and other health problems, including chronic diseases. The Nutrition Canada Survey also demonstrated that low-income Canadians were at higher risk of nutritional problems than middle- and higher-income groups (Myres and Kroetsch, 1978). Family Food Expenditure Data from 1982, 1984 and 1986 (Statistics Canada, 1985; 1986; 1989) show that low-income families spend less per capita on food, but more as a percentage of disposable income than do other income groups. Contrary to popular belief, lower-income families generally purchase foods that reflect a more nutrient-dense diet than do higher-income families (Statistics Canada, 1985; 1988; 1989). Food security, hunger and poverty are issues of critical concern (Maxwell and Simkins, 1985; Campbell *et al.*, 1988; Welsh, 1989), especially for such groups as lone-parent, women-headed families. Nearly half (48%) of these families had incomes below the poverty line in 1985 (Johannsen *et al.*, 1989). Food banks are another visible indicator that hunger exists in the midst of plenty. Riches (1989) estimated that there were more than 300 food banks in Canada in 1989, compared to none in the 1970s.

Solutions to the complex problems that go hand in hand with low income, although they often seem illusory, must be found. The high cost of housing in many regions of Canada and the limited availability and high cost of some food products in isolated parts of the country are a challenge to food security for some segments of the population. Nutrition professionals have been encouraged to advocate on behalf of Canadians whose food security is threatened (Campbell *et al.*, 1988), and this practice has proved effective in one Canadian province.

In 1988, the Nova Scotia Nutrition Council completed a study on whether social assistance allowances were adequate in terms of the costs of a nutritious diet (Nova Scotia Nutrition Council, 1988). The study revealed that the food allowance fell significantly short of the cost in 1988 of purchasing foods required for a healthful diet. As a result of this study, the government of Nova Scotia increased food allowances for social assistance recipients. No published analyses of social assistance allowances for other jurisdictions were found. In 1989, Agriculture Canada (Robbins and Robichon-Hunt, 1989) revised its Nutritious Food Basket and added a new category, the Thrifty Nutritious Food Basket, to its ongoing study of the cost of food in 18 cities across the country. The foods selected for the Thrifty Nutritious Food Basket were based on the food consumption patterns of low-income Canadians and were selected to meet the 1983 Recommended Nutrient Intakes for Canadians (Health and Welfare Canada, 1983). This regular survey will assist social and health policy planners who need to establish local standards in order to assess food allowances in social assistance programs.

C15 The CIC recommends that provincial, territorial and municipal governments examine social assistance allowances, and adjust where necessary, to ensure that recipients can achieve Canada's Guidelines for Healthy Eating.

Health and Welfare Canada conducted a survey of Canadian public health departments and community organizations to identify existing nutrition programs for the disadvantaged segments of the population (Maxwell and

Simkins, 1985). Respondents identified nutrition education for disadvantaged groups and food supplementation and distribution programs as important issues for certain vulnerable groups such as pregnant women, the elderly and school-aged children. The survey revealed that while there were nutrition education programs available for some segments of the special-needs population (such as pregnant women, the elderly and low-income families), there were few or no such programs for newly arrived immigrants, the disabled, lone parents and unemployed youth. *Special programs which address the cultural differences, divergent lifestyles, more limited life-skills and resources and socio-economic constraints of these vulnerable groups are needed.*

Literacy

Although Canada has one of the most educated populations in the world, it also has a significant number of illiterate citizens. The Southam Literacy Report (Calamai, 1987) estimates that 24% of adults over 18 years are functionally illiterate; that is, they are unable to use printed and written information to function in society. The study found that:

- illiteracy is less prevalent in the west than in the east (17% of adults in British Columbia, compared to 44% in Newfoundland, are illiterate);
- illiteracy is higher among Francophones than it is among Anglophones;
- nearly half of those classified as functionally illiterate are 55 years or older;
- half of those classified as illiterate report that they went to high school, and one in 12 claims to be a university graduate;
- children of the unemployed, the working class and the poorly educated are much more likely to be illiterate; and
- more men than women are illiterate.

The illiterate population presents a special challenge for effective communication of nutrition information. In all probability, nutrition information appearing on food labels, in printed pamphlets and booklets and in *Canada's Food Guide* is not read or understood by this segment of the population. *Specially targeted programs and materials will be required to communicate nutrition information to individuals and groups with limited literacy skills.*

Food Supply

Canada is fortunate to have a safe and nutritionally adequate food supply that most people can afford. However, challenges exist in providing Canadians with more food choices that will help them establish a healthful diet according to Canada's Guidelines for Healthy Eating. The dramatic reductions called for in the quantities of total and saturated fats consumed require efforts on the part of food and food services industries as well as consumers. In addition, food product development and animal and plant breeding practices play an important role in implementing dietary guidelines. Examples of the types of efforts required include the following:

- government support, through legislation and regulations that promote the development of foods with reduced fat levels or with unsaturated fats as substitutes;
- determination of the feasibility of substituting more unsaturated fats for saturated fats in formulated meats and dairy products; and
- limitation of trans-fatty acids incorporated into food products.

The recommendation for reduced sodium intake also requires attention from the food industry, which uses ingredients containing sodium as flavour enhancers, preservatives, seasoning agents, curing agents, formulating and processing aids and dough conditioners. Although industry has already made significant strides in the reduction of sodium in food processing, even more efforts are required.

The food industry also faces the challenge of increasing efforts to produce processed foods with adequate levels of micronutrients for the energy (kcal/kJ) they contain. Because Canadians will continue to be concerned with the energy level of their diet in their efforts to maintain a healthy body weight, foods low in nutrients will be left by

the wayside. Special efforts in this area will be required in categories such as snack foods, baked goods and dairy products.

In order for Canada's Guidelines for Healthy Eating to be implemented successfully, departments of agriculture and the food industry will need to make nutrition a major consideration in developing and producing new food products. The Canadian food supply must be modified in order to give consumers access to more foods that are consistent with the Guidelines.

It appears that many municipal governments will face a challenge regarding the recommendation for water fluoridation. Health and Welfare Canada (1988) reported that the most recent data (1976) on water fluoridation indicated that only 37% of the Canadian population, and 46% of those with piped water systems, were consuming fluoridated water.

To support the changes necessary in the food supply to ensure implementation of Canada's Guidelines for Healthy Eating,

the CIC recommends that the Department of National Health and Welfare:

B10 Advocate for appropriate changes to the *Canadian Agricultural Products Act* to allow for development of low-fat, standardized dairy and meat products.

B11 Advocate changes to dairy-product legislation to make available lowered-fat and altered-fat products in all provinces.

B12 Advocate to Agriculture Canada and provincial counterparts for nutrition as a primary determinant in agricultural food-product development.

B13 Advocate to the food industry for nutrition as a primary determinant in food-product development.

The CIC recommends that provincial, territorial and municipal governments:

C14 Ensure municipal water contains fluoride at levels not less than 1 mg/litre.

C16 Change dairy product legislation, where restricted by law, to make available lowered-fat and altered-fat food products.

C17 Make nutrition a primary determinant in agricultural food-product development.

C18 Promote provincial food products based on their nutritional benefits.

The CIC recommends that the food industry:

F1 Develop and incorporate company nutrition policies that encourage the production and promotion of food products and menu plans consistent with Canada's Guidelines for Healthy Eating.

F2 Develop products low in total fat and energy and high in micronutrients. This would have greatest impact in dairy and bakery products and snack foods categories.

F3 Reduce the use of salt and sodium-based ingredients in food processing.

F4 Moderate the incorporation of trans-fatty acids into food products.

F13 Conduct research and development activities to help create products that are low in total fat, saturated fat and cholesterol, and high in complex carbohydrates and fibre.

The CIC recommends that the food services sector:

G2 Provide food choices for consumers that are low in total fat, saturated fat and cholesterol and high in complex carbohydrates and fibre in restaurants, cafeterias and vending machines.

G3 Use non- or low-fat cooking methods in food preparation wherever possible.

G4 Limit the use of salt in food preparation.

G5 Emphasize menu items that are high in complex carbohydrates and low in total fat.

Free Trade

The National Institute of Nutrition sponsored a forum addressing the question of the impact of the Canada-U.S. Free Trade Agreement on nutrition in Canada which identified the harmonization of policies of the two countries as the central issue (Schwartz, 1989). Among the topics discussed at the forum were the need for and likelihood of harmonization of standards, regulatory requirements and policy in such areas as food labelling, food fortification and enrichment, nutrition claims and dietary guidance systems.

Two-thirds of grocery shoppers surveyed in GPMC's Grocery Attitudes study (1989) reported that they expect free trade to result in more brands and a wider range of products being available in the supermarket. Furthermore, half of the shoppers felt there would be fewer Canadian products, and three-quarters said they expected there would be more American products in the marketplace.

If and when harmonization occurs, it will impact on nutrition messages, methods of delivery and implementation strategies. In view of future pressures from the United States, there is an urgent need for clear Canadian nutrition policy, spoken with a unified voice. To respond to this need, an Interdepartmental Committee on Food Regulation has been formed (Liston, 1989). It is chaired by the Deputy Minister of National Health and Welfare and includes as members deputy ministers of Agriculture, Consumer and Corporate Affairs and Fisheries and Oceans. This committee has been charged with overall policy coordination of harmonization activities in the food area. The Free Trade Agreement may influence accessibility of foods and public policy, thereby affecting the implementation of Canada's Guidelines for Healthy Eating.

Existing Infrastructure

There are programs, organizations and networks currently in place that can be used to communicate and implement Canada's Guidelines for Healthy Eating. Some examples of key players and organizations are given below.

Community and Public Health Nutrition Personnel

Nutritionists are employed in public health and health promotion programs across the country at the federal, provincial, territorial and municipal government levels. Public health nutritionists identify populations at risk for nutrition-related problems, priorize community nutrition needs, and plan, coordinate, implement and evaluate population-based intervention programs (Federal-Provincial Subcommittee on Nutrition, 1981; Kaufman, 1982; 1986). These specialized nutrition professionals are the key leaders in local communities for facilitating and coordinating nutrition promotion efforts in the community (Davis, 1989).

A recent national census estimated that there were 218 public health nutritionists employed in provincial, territorial or municipal government positions in November 1988 (Gatchell, 1989), compared to an estimated 237 positions in 1981 (Federal-Provincial Subcommittee on Nutrition, 1981). This 1988 survey (Gatchell, 1989) found that 43% of public health nutritionists are the sole nutritionist in their agency. Over 80% of these nutritionists serve a population of over 50 000 (24% serve 50 000-99 999; 43% serve 100 000-249 999; and 15% serve 250 000-499 999). The Association of State and Territorial Health

Officials Foundation (Kaufman, 1982) has suggested that public health programs should aim for one master's level trained public health nutritionist per 50 000 population as the base for effective planning and efficient services. This recommendation includes personnel involved in management of public health nutrition programs, but does not include nutrition personnel who are required for direct service program delivery. The national ratio in Canada is estimated at one nutritionist per 100 000 (all public health nutritionists, including those in direct service programs) with wide variation in services offered from one region to another. Applying the recommended ratio to the current Canadian population of 25 354 064 (Statistics Canada, 1987), 507 public health nutritionists are required in Canada. In order to provide the leadership and coordination necessary for effective communication and implementation of Canada's Guidelines for Healthy Eating, adequate professional nutrition resources are required at provincial and municipal levels (Davis, 1989).

C6 The Communications/Implementation Committee recommends that the provincial, territorial and municipal governments review staffing levels in community health services to achieve a minimum ratio of one public health nutritionist per 50 000 population.

Increased efforts to incorporate nutrition into community health services are required. *Initiatives such as the legislation in the province of Ontario mandating nutrition as part of public health programs are strongly recommended.*

Federal, Provincial and Territorial Group on Nutrition

Although few in number, community and public health nutritionists provide leadership and are important resources for the development and implementation of nutrition promotion programs across the country. The Federal, Provincial and Territorial Group on Nutrition consists of the senior public health nutritionist in each provincial and territorial health department and Health and Welfare Canada representatives from the Health Promotion Branch, the Medical Services Branch and the Health Protection Branch. This group was established in 1988, to replace the Subcommittee on Nutrition, as a network for sharing information about nutrition issues, programs and priorities. It can also advise, as appropriate, the Federal/Provincial Advisory Committee on Community Health on key issues regarding the nutritional health of Canadians and on programs for federal, provincial and territorial collaboration. It will continue to serve an important role in coordinating the efforts of public health nutritionists to develop programs for communicating and implementing Canada's Guidelines for Healthy Eating.

Nutritionists in Other Programs

Dietitians, who make up the majority of nutrition professionals in Canada, are employed as nutrition professionals in governments, health care and educational institutions, community health agencies, food and pharmaceutical industries and agriculture organizations. The Canadian Dietetic Association (1989) estimates that, of its 4500 members, 350 practice in public health and other community settings, including the food industry, community health centres, mass-media and health and agriculture organizations. The majority of remaining dietitians are employed in clinical positions in hospitals or in administrative positions in food services facilities. Dietitians practice as educators, counsellors, consultants, spokespersons, researchers and managers.

In their practice, dietitians are responsible for developing food and nutrition policies; planning, developing and delivering nutrition programs; and developing resources. These policies, programs and resources influence the consumer's nutrition knowledge and food choices. Dietitians have many opportunities in the course of their work to implement and communicate nutrition recommendations and to provide advice to other professionals and consumers.

Provincial milk marketing boards and dairy foundations also employ nutrition educators, who play a significant role in providing nutrition education materials for use in the school system and in other nutrition education settings. These boards, together with other food commodity

groups, will be important partners in communicating and implementing Canada's Guidelines for Healthy Eating in the settings in which they work.

The Canadian Dietetic Association

The Canadian Dietetic Association is a national professional association representing 4500 dietitians across Canada. The mission of the Association is to promote and support quality dietetic practice among its members and the optimal nutritional well-being of the public.

To fulfil its mission, the CDA publishes the *Journal of the Canadian Dietetic Association*, general and specialized newsletters and resource manuals for its members and others. It provides its members with continuing education programs through an annual conference, specialized workshops and teleconferences.

The Association takes an active role in the development of national nutrition policies and programs of government and health-related organizations. This is done through official liaisons, representation on expert and working groups, development and advocacy for its positions on nutrition issues and reviews of draft documents and legislation. The CDA brings nutrition messages directly to the public through an annual nutrition campaign and a media-relations program designed to share its views and opinions, as well as the expertise of its members.

The CDA is affiliated with 10 provincial dietetic associations, which have similarly active programs at the provincial level and support regular provincial and regional meetings of members. The dietetic associations provide a strong infrastructure for communicating nutrition messages to the professional community, in a broad range of work settings, and through daily practice to the public, other health professionals, policy planners, health care administrators, community groups and the media.

Health Professionals and Their Organizations

The Communications/Implementation Committee recognizes that there are several other health professional associations, who along with their members, play a very significant role in communicating with the public about nutrition. Many of these associations have collaborated with the Committee by contributing to its deliberations (see Appendix A). Physicians, nurses, dental professionals and other health professionals are a major channel for communicating with the public, and are viewed by the public as reliable sources of up-to-date health and nutrition information. The organizations representing these professionals are important partners in the efforts to communicate and implement Canada's Guidelines for Healthy Eating. Key examples of these organizations are the Canadian Medical Association, the Canadian Paediatric Society, the Canadian Nurses Association, the Canadian Dental Hygienists Association, the Canadian Dental Association, and the Canadian Public Health Association.

Integration of nutrition into the curricula of formal educational programs for these health professionals is critical. Appropriate support from nutrition professionals is also recognized as a priority to ensure that the public is served effectively by these health professionals.

To support the implementation of Canada's Guidelines for Healthy Eating, the CIC recommends that nutrition and other health professional organizations:

D1 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to the healthy public over two years of age.

D2 Promote Canada's Guidelines for Healthy Eating and their implementation to members (through journals, newsletters, continuing education, annual meetings, etc.).

D3 Stimulate discussion by and active participation of members at the national, provincial and community level to implement Canada's Guidelines for Healthy Eating.

D4 Coordinate efforts with other partners to ensure the communication of a consistent message about diet and health.

D5 Work with the public and private sectors and voluntary health agencies to develop and support nutrition policy at the national, provincial, territorial and community levels.

D6 Place greater emphasis on nutrition in health promotion and prevention in education and continuing professional education programs for nutritionists and other health professionals.

D7 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

D8 Advocate for and support efforts to develop provincial, territorial and local nutrition policies in schools.

D9 Advocate for nutrition as a primary determinant in institutional and commercial food service.

D10 Advocate to Agriculture Canada and provincial counterparts for nutrition as a primary determinant in agricultural food-product development.

D11 Advocate to the food industry for nutrition as a primary determinant in food-product development.

D12 Generate data on awareness of and compliance with Canada's Guidelines for Healthy Eating, where health survey and research opportunities exist.

D13 Advocate to the public and private sectors to undertake research in support of the implementation of Canada's Guidelines for Healthy Eating.

Individual nutrition and other health professionals can also take action in support of implementing Canada's Guidelines for Healthy Eating.

The CIC recommends that nutrition and other health professionals:

E1 Encourage the implementation of Canada's Guidelines for Healthy Eating through advocacy for local policies (for example, municipal, worksite, and school board policies).

E2 Implement Canada's Guidelines for Healthy Eating in the agencies and settings in which they are employed in an effort to provide healthy clients with a consistent nutrition message.

E3 Involve community leaders, the private sector and potential clients in integrating Canada's Guidelines for Healthy Eating into local programs (for example, programs for low-literacy groups and ethnic subgroups).

E4 Initiate partnerships (for example, with community and church groups, and with worksite representatives) in the design, implementation and evaluation of community-based nutrition intervention programs.

E5 Advocate for the integration of a nutrition component into all relevant community health programs.

Non-governmental Organizations

Many non-governmental nutrition and health organizations are active partners in the development and delivery of nutrition programs in Canada. This sector provided a valuable contribution to the Communications/ Implementation Committee and will continue to be a key link in the intersectoral implementation of Canada's Guidelines for Healthy Eating which is recommended by the CIC.

The National Institute of Nutrition

The National Institute of Nutrition (NIN) was established in 1983 as a private, non-profit organization. It represents a unique partnership among respected authorities from nutrition and health sciences, education, industry and government. The Institute is funded by its member companies and affiliates, governed by a Board of Trustees and guided by authoritative scientific, public policy and communication advisory councils. The NIN serves as an objective, credible voice for nutrition in Canada. The mission of the NIN is to provide leadership in advancing the knowledge and practice of nutrition among Canadians by targeting programs to health professionals, media, educational institutions, government and industry. It plays a crucial role in promoting collaboration among individuals and groups with different perspectives and spheres of influence who have a common goal to improve the nutritional health of Canadians. The NIN's programs serve two major purposes: communicating nutrition information and supporting nutrition research and education.

The NIN publishes *Rapport*, a quarterly newsletter with timely articles written by Canadian authorities, and *NIN Review*, a series of concise statements on nutrition topics of current interest. The NIN also responds to enquiries regarding nutrition from such sources as media representatives and health professionals.

The NIN's nutrition research and education programs include Institutional Awards, granted to universities for developing and enhancing nutrition programs and post-doctoral fellowships in order to support NIN Fellows pursuing advanced studies at centres of excellence in nutrition research. The NIN sponsors a university entrance scholarship as well as workshops and symposia on various nutrition topics.

PARTICIPaction

PARTICIPaction was established in 1972 as a private, non-profit fitness promotion agency committed to the development of strategies and initiatives to help Canadians adopt a healthier lifestyle. Since 1986, PARTICIPaction has added nutrition to its message, making proper nutrition and regular physical activity the bases of a healthy lifestyle (Davis, 1987). PARTICIPaction employs a full-time team of specialists in fitness, motivation, communication and production. They are supported by an extensive national consulting network of educators, fitness program leaders, nutritionists, advertisers, health professionals, communications specialists and researchers. The main activities of PARTICIPaction include public service advertising (estimated value of donated time is $15 million yearly), networking with governments, private sector corporations, health professionals and the general public and sponsoring programs for such clients as federal and provincial governments and major corporations. These sponsored programs have included two that focused specifically on nutrition and involved effective partnerships with private and public sector organizations: Project Apex was developed in collaboration with the Ontario Milk Marketing Board and the government of Ontario. After this educational program on nutrition and fitness was developed and tested, it was distributed to over 1000 classrooms in Ontario and is now being introduced in schools in other provinces. The other project, which was developed in cooperation with the H.J. Heinz company, yielded a targeted educational package designed for distribution to consumers through family physicians. Nearly four million packages of this type were delivered.

Health-related Organizations

The Canadian Cancer Society, the Canadian Hypertension Society, the Canadian Diabetes Association, the Osteoporosis Society of Canada and the Heart and Stroke Foundation of Canada are examples of voluntary organizations that communicate health and nutrition messages to the public through a variety of programs,

resources and networks. In some instances, these organizations communicate their own nutrition recommendations. Many of them enlist the help of community volunteers in delivering their programs, thereby fostering public participation in nutrition and health promotion.

Several of these organizations participated in the discussions convened by the National Institute of Nutrition, in which participants identified the need for consensus about nutrition recommendations. The Communications/ Implementation Committee received information from several of these organizations (see Appendix A) regarding roles they might play in communicating and implementing such recommendations.

To ensure that nutrition messages communicated to the healthy population are consistent, Canada's Guidelines for Healthy Eating must be adopted as the single set of nutrition recommendations for communication to the healthy population over two years of age.

In support of efforts to implement Canada's Guidelines for Healthy Eating, the CIC recommends that non-governmental organizations:

H1 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to the healthy public over two years of age.

H2 Mobilize members and volunteers to promote Canada's Guidelines for Healthy Eating.

H3 Ensure adequate professional support for nutrition programs.

H4 Initiate partnerships (for example, with school, worksite, hospital and private sector representatives and nutrition and other health professionals) in the design, implementation and evaluation of community-based nutrition intervention programs.

H5 Work with the public and private sectors and health professional organizations to develop and support nutrition policy at the national, provincial, territorial and community levels.

H6 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

H7 Support evaluation of nutrition and health promotion programs through funding.

H8 Support research on the relationship between diet and chronic diseases.

H9 Advocate to Agriculture Canada and provincial counterparts for nutrition as a primary determinant in agricultural food-product development.

H10 Advocate to the food industry for nutrition as a primary determinant in food-product development.

Heart Health Network

The Canadian Heart Health Network, founded in March 1987, is a coalition of organizations involved in heart health programs. The network's main functions are: serving as a forum for information exchange; identifying data, resource and policy-related needs; and forming partnerships to address these needs. Members include representatives from community, social and health agencies, professional and voluntary health organizations, and representatives from various departments of the provincial, territorial and federal governments, such as departments of health, agriculture, health promotion and fitness.

The Network was established by the Department of National Health and Welfare as part of the Canadian Heart Health Strategy, which was first outlined in *Promoting Heart Health in Canada* (Health and Welfare, 1987), a report of the Federal-Provincial Working Group on the

Prevention and Control of Cardiovascular Disease. Network meetings are held in various communities across Canada in order to stimulate and give impetus to local and provincial heart health activities. These meetings are made possible with the assistance of the federal government, the host province, the Heart and Stroke Foundation of Canada and the private sector.

The Network plays an important role in advocating and facilitating the development of public policies and heart health programs that respond to the needs of communities. It is an example of intersectoral cooperation in addressing an important nutrition-related health issue.

The Canadian Public

Health promotion involves enabling Canadians to take action to improve their health. Fostering public participation has been identified as a means to help people to gain control over the factors which affect their health (Health and Welfare Canada, 1986). Public participation, defined as the individual and collective action of people to become involved in and improve their community (Powell, 1988), can occur at the individual or group level. People can take various types of action, from assessing individual needs to influencing programs and policies in a community.

Community nutrition programs can foster public participation by moving beyond providing people with nutrition information and recommending specific behaviours. Nutrition education programs can be used as instruments of empowerment by encouraging individuals and groups to increase their ability to define, analyze and act on their own food and nutrition problems (Kent, 1988). In order for health and nutrition education to empower individuals, it must consider the political, social and economic factors affecting health and nutrition. It should encourage local people to participate in the interpretation and analysis of their own food and nutrition issues and concerns (Kent, 1988; Labonte, 1989).

Ultimately, it is the Canadian public that makes decisions about food choices that affect health. Specific actions will be required by Canadians to implement Canada's Guidelines for Healthy Eating.

The CIC makes the following recommendations for action to the public:

I1 Adopt Canada's Guidelines for Healthy Eating for those over two years of age.

I2 Influence family, friends and co-workers to adopt Canada's Guidelines for Healthy Eating, and support them in their efforts to do so.

I3 Advocate for financially, geographically and culturally accessible food choices consistent with Canada's Guidelines for Healthy Eating in locations such as supermarkets, schools, workplaces, and restaurants.

I4 Advocate for food and nutrition policies in the community and at a national level that support Canada's Guidelines for Healthy Eating.

I5 Advocate for availability of and accessibility to nutrition programs in the community.

9.
Nutrition Intervention Programs

The next sections summarize current knowledge gleaned from published literature on effective nutrition programs. The aim of these sections is to identify intervention programs that have been successful in changing nutrition behaviour to make it compatible with health. It is essential that Canada's Guidelines for Healthy Eating be implemented using successful methods and programs, since these are most likely to bring about behaviourial changes. While the reviews outlined below do not attempt to present a comprehensive survey of past programs and activities, the CIC was able to arrive at conclusions about the more effective methods and strategies for moving the population towards healthier nutrition practices.

Because the Committee was faced with a paucity of documentation on nutrition programs in Canada, and almost no studies that contained evaluation data, it concluded that further research was urgently needed. Wherever possible, Canadian examples are used. The reviews presented below are organized by key settings for implementing nutrition intervention programs.

> The CIC recommends that greater efforts be undertaken to conduct research and evaluation on nutrition intervention programs and that information about successful projects be transferred to other communities and settings.

School Programs

Canadian studies on the health knowledge (King *et al.*, 1984) and health attitudes and behaviours (King *et al.*, 1986) of 30 000 children aged 9, 12 and 15 revealed serious concerns. For example, the Canada Health Knowledge Survey (King *et al.*, 1984) indicated that most grade four children knew about the four food groups in *Canada's Food Guide*, but were unable to identify a meal in which the food groups were reflected. Surveys of grades seven and ten students revealed serious gaps in nutrition knowledge. The 1984 Study on Health Attitudes and Behaviours (King *et al.*, 1986) identified several problem areas in the eating habits of these school children. Among these problems were the following:

- nearly one-half did not eat a balanced diet as defined by *Canada's Food Guide*;
- one-third of the students did not eat vegetables daily;
- 20% of 15-year-olds rarely ate breakfast;
- two-thirds of children had high fat intakes;
- 25% had high sugar intakes; and
- as children got older, they were less likely to eat yellow vegetables, fish, beans and whole grain breads and cereals.

There are two principal opportunities for nutrition intervention programs in the school system: in the classroom and in the food services system of the school. The former can be used primarily to educate students and families about nutrition and a healthful diet; the latter to reinforce the educational message by providing an environment supportive of healthy nutrition behaviour. These efforts must be supported by comprehensive food and nutrition policies in the school.

Johnson and Johnson (1985), in a meta analysis of over 300 nutrition education research studies, noted that nutrition education is effective in increasing nutrition knowledge, developing positive attitudes about nutrition and increasing consumption of nutritious foods. The U.S. School Health Education Evaluation (Connell at al., 1985), which involved over 30 000 elementary school children, also found that health education programs have a significant impact on health knowledge, attitudes and practices, with the greatest increases noted in the knowledge

category. This study further noted that teacher training and support materials promote the implementation of school health programs.

Weis and Kien (1987) identified several factors that have an effect on school nutrition education programs, including teacher training, teaching strategies, parental involvement, curricular concerns, administrative support and social and cultural factors. Based on a review of available research on nutrition education programs at the elementary school level, the authors concluded the following:

- teacher training in nutrition improves teachers' knowledge of nutrition and increases classroom instruction time on nutrition;
- teacher training should devote at least as much time to teaching nutrition strategies as to nutrition content;
- nutrition instruction should involve children directly and actively in the learning process;
- peer education is an effective method for nutrition education;
- parental support and participation in nutrition education have an important influence on its effectiveness;
- the integration of nutrition education with other academic subjects increases instruction time for nutrition and increases knowledge among students;
- nutrition education is most effective when provided in a planned, organized, and sequential curriculum;
- administrative support for nutrition education increases program effectiveness;
- children's dietary preferences and behaviours are influenced by social and cultural factors; and
- the application of a theoretical framework for nutrition education assists in establishing program objectives, identifying intervention targets, and determining appropriate teaching strategies.

A Canadian Education Association study (1989) reported that of 72 boards of education responding to a national survey, 34 had a nutrition component in their curriculum (32% in health courses; 6% in home economics; 12% in both health and home economics; and 9% in family studies). Twenty school boards reported using nutrition professionals in their programs, and 10 reported employing their own nutritionist.

Teacher training in nutrition appears to be limited. A survey of Ontario high school teachers in the areas of health and physical education, family studies and science showed that less than 50% had taken even one nutrition course as part of their university education (Vandenbygaart and Woolcott, 1985). About 40% of these teachers had participated in a nutrition workshop sponsored by the Ontario Milk Marketing Board. Nutrition education workshops provided by provincial dairy foundation and milk marketing board nutritionists appear to be the major source of in-service nutrition education for teachers in most provinces. These workshops provide ready-to-use nutrition education materials for the classroom and training for teachers who wish to use the materials in the classroom.

The nutrition programs offered by provincial marketing boards have been evaluated in British Columbia (Schwartz and Clampett, 1983), Alberta (McEwen and Kieren, 1984) and Ontario (Davis and Horgen, 1988). Results of these evaluations indicate moderate use of the nutrition education materials by teachers who attend these workshops. Except for an evaluation of Project Apex (Davis and Horgen, 1988), which was developed by the Ontario Milk Marketing Board in collaboration with PARTICIPaction and the Ontario Physical and Health Education Association, there are no recent studies documenting the effectiveness of nutrition education in Canadian schools in terms of student knowledge, attitudes and behaviour. Project Apex is an innovative curriculum for students from grades four to six which combines nutrition education with physical activity. The program involves parents as well as students, the latter participating in activities designed to promote learning and encourage the setting of nutrition goals. Preliminary evaluation of this program indicates more complete knowledge and improved attitudes about nutrition and physical activity among students. It also suggests that

teachers' attitudes towards nutrition education also improved significantly with the use of these curriculum materials (Davis and Horgen, 1988).

Other school nutrition initiatives have been reported in Toronto (Latchford, 1986) and in Prince Edward Island (Anderson and Reddin, 1982).

In conclusion, the school is an ideal setting for reaching children and adolescents, as well as their families, with nutrition education. In Canada, it appears that little formal nutrition education is in fact being offered in schools. This may be due to a lack of formal nutrition policies at the provincial and local levels, a lack of provincial nutrition curriculum guidelines and inadequate nutrition training for teachers.

C11 The CIC recommends that provincial, territorial and municipal governments fully integrate nutrition into curricula at all levels of the formal education system, including teacher education programs.

Public health nutritionists in various parts of the country report a number of examples of initiatives aimed at improving school food services. In Nova Scotia, public health nutritionists have developed "Guidelines on the Sale of Snacks in Nova Scotia Schools" (Nova Scotia Department of Health, 1989) to assist school personnel in the selection of canteen foods. Similar guidelines have been available since 1976 in Ontario, when public health nutritionists and dentists published "A Working Paper on School Food Services" (Ontario Ministry of Health, 1976), which presented recommendations for improving school food services. "School Food: Giving Students a Better Break" was published by the British Columbia Ministry of Health in 1988. Food services operating in schools are also a potential source of nutrition education and information programs, such as *Healthier Eating: The Smart Choice*, a program offered by Beaver Foods in the high schools it serves.

Documentation on school food services programs in Canada was difficult to find. The Canadian Education Association (1989) survey of boards of education obtained information about programs directed at hungry children. A wide variety of programs were reported, including snack programs, free meals, nearly free meals, and subsidized meals. The nutritional quality of foods available was not reported.

C12 The CIC recommends that provincial, territorial and municipal governments ensure that foods served in Canadian schools be consistent with Canada's Guidelines for Healthy Eating.

Because education falls within provincial jurisdiction, there are no national nutrition programs aimed at school children in Canada. Quebec appears to be the only province with a provincial school nutrition policy (Quebec, 1988). This policy was the result of intersectoral cooperation among the ministries of Health and Social Services, Agriculture, Foods and Fisheries and Education. As a result, should any school board in the province choose to implement nutrition education programs and to establish food service environments supportive of this education in their schools, it receives concrete government support.

At the local level, many school boards, such as the Vancouver School Board (Eisler *et al.*, 1985), have approved school nutrition policies. However, there are large gaps between adherence to and existence of such policies. For example, in a recent study of over 562 schools in Newfoundland (Leach, personal communication, 1989), only 37% reported that they had a school food policy, even though 44% of boards of education reported having such policies. Roughly half of the schools stated that they complied fully or partially with these policies. A survey of the 42 New Brunswick school boards by the New Brunswick Association of Dietitians found that only four (11%) school boards had a food and nutrition policy in place, although concern or interest in such policies was expressed by 41% of boards (Rankine, personal communication, 1989). A 1987 study of nutrition education in schools in the Regional Municipality of Ottawa-Carleton (Cronier, 1987) found there were no food policies available, but that nutrition was part of the curricula in health and environmental studies programs at the primary

and junior levels and in the family studies program at the intermediate level in most boards. The study raised questions about the quality of nutrition education and recommended that the Ontario Ministry of Education allot more compulsory time to health and nutrition education at the high school level. The Canadian Education Association national survey (1989) of selected boards of education confirmed that there are gaps in the availability of nutrition policies at the school board level. Twenty-seven of 68 boards responding to the survey had no nutrition policy at all.

Evidence suggests that appropriate professional nutrition support and resources are needed to communicate Canada's Guidelines for Healthy Eating to schools, and to implement them through school curricula, food services and health promotion programs.

C13 The CIC recommends that provincial, territorial and municipal governments initiate coordinated comprehensive food and nutrition policies in schools.

Worksite Programs

Worksites provide a means of reaching a very large proportion of the adult population, both men and women. Health promotion programs in the workplace have been shown to have a positive impact on the health, productivity and morale of workers, as well as to reduce the recourse to and costs of health care (Bly *et al.*, 1986). Worksite representatives may wish to initiate a nutrition education program, such as that in the school setting, or target food services operations (vending machines, canteens, cafeterias and restaurants).

The literature contains few studies of Canadian worksite programs. A survey of nearly 200 worksite health promotion programs in Montreal (O'Loughlin *et al.*, 1988) indicated that only 10% had nutrition components (defined in the study as nutrition counselling). The Manitoba Division of the Canadian Cancer Society has developed a worksite nutrition awareness program (Thomas, 1989), but evaluation data have not been published. In Ottawa, a needs assessment for a workplace weight control program was carried out (Reid and Dunkley, 1989). In Alberta, the Red Deer Regional Health Unit developed the *Take Heart* program for heart health worksite programs (Buffam, 1988). The program includes a participant workbook and a resource kit containing information on how to conduct a comprehensive heart health program, including risk analysis, one-to-one counselling, and group sessions. The program is currently being used in Alberta worksites; however, evaluation data are not yet available. A study conducted by the Canadian Hospital Association in 1987 examined the extent of hospital involvement in health promotion. From the 11 cases presented, nutrition counselling was ranked number one as the type of program offered to employees as well as in-patients, out-patients and community members. Further studies documenting the availability of worksite nutrition programs in Canada were not found.

In 1985, the U.S. Department of Health and Human Services reported that about 16% of American companies had some type of nutrition program for employees. The types of programs available in American worksites included weight-loss programs (Nelson *et al.*, 1987; Shannon *et al.*, 1986; Sumner *et al.*, 1986), coronary disease prevention programs (Peterson *et al.*, 1986; Quigley, 1986) and cafeteria point-of-purchase information programs (Schmitz and Fielding, 1986; Zifferblatt *et al.*, 1980). Rickmond (1986) developed a program to teach worksite cafeteria staff how to prepare more "heart healthy" foods through recipe modification, new menus and promotional activities. *Weight Watchers* developed a worksite program (Frankle *et al.*, 1986) to meet the demands for weight-control in the workplace. The National Cholesterol Education Program also developed worksite strategies (La Rosa *et al.*, 1986). In a review of nine weight control programs implemented at worksites, Foshee and co-workers (1986) reported that the worksite offers many advantages as a setting for such programs, including a high potential for intervention and support in the work environment (such as the cafeteria and other food services), competition between employees, social support, and medical support to assist employees in maintaining changes in eating habits.

There are two major resources to assist those planning worksite nutrition programs: *A Guide to Enhancing Nutrition at the Worksite* (Shannon, Demicco and Fishman, 1986) and *Worksite Nutrition: A Decision-Maker's Guide* (American Dietetic Association, Society for Nutrition Education, U.S. Department of Health and Human Services, 1986).

Although there are no published reports of food services programs for nutrition education in Canadian worksites, some company food services operations, such as Versa Services (the *Treat Yourself Right* program), have such programs.

> The CIC recommends that worksite nutrition intervention programs be developed and evaluated as a means of implementing Canada's Guidelines for Healthy Eating.

Point-of-purchase Programs

Opportunities exist for nutrition intervention at the point of purchase in supermarkets (nutrition labelling, shelf labelling, in-store promotions and tours), and in restaurants and other food service locations such as cafeterias, vending machines, and canteens (menu labelling, table tents and placemat messages).

In November 1988, the Canadian government approved new labelling regulations for voluntary nutrition labelling on food products. The nutrition label may contain a statement of the recommended serving size and the nutrients in a serving. The minimum nutrient information required (core list) on the label consists of the energy value, in calories and kilojoules, and the amounts of protein, fat, and carbohydrates contained. Other types of information that may be listed are: fat content (including polyunsaturates, monounsaturates, saturates and cholesterol); carbohydrates (including sugars, starch and dietary fibre); sodium and potassium. One or more of the following vitamins and minerals may also be listed: vitamins A, C, D and E, thiamin, riboflavin, niacin, vitamin B_6, folacin, vitamin B_{12}, pantothenic acid, calcium, phosphorus, magnesium, iron, zinc and iodide. These nutrients must be expressed as percentages of the Recommended Daily Intake, which is a reference standard based on the 1983 Recommended Nutrient Intakes for Canadians.

The recent nature of these regulations makes it impossible to analyze the impact of nutrition labelling on food choices. Education programs to accompany the labelling program have yet to be developed. Health and Welfare Canada (1989b) produced a pamphlet called "Nutrition Labelling: The Inside Story", which was available in limited distribution in grocery stores across the country. Given the complexity of the nutrition label information permitted by the new regulations, a consumer education program to help consumers understand and use the label information is of critical importance.

It is still too early to document the extent to which consumers will use nutrition information on the label in decisions to purchase food. The 1989 Grocery Products Manufacturers of Canada survey of grocery shoppers found that consumers are more interested in price, best-before dates and cooking instructions than in nutrition information. The nutrition information that consumers did claim to look for was the content of the following: sugar (69%), fat (63%), calories (63%), fibre (61%), salt or sodium (59%), vitamins and minerals (55%), cholesterol (52%), calcium (52%), protein (41%) and carbohydrates (39%). There is some evidence that a gap exists between reported interest in label information and actual use of the information in decisions to purchase (Liefeld, 1983). Just over one-quarter of cereal shoppers surveyed by the Gallup Poll regarding nutrition labelling on cereals reported that they read labels occasionally or frequently (Peterson, 1984). Of those who reported that they used label information, 47% said they did so to see how a particular product fit into a balanced diet; 25% said they used the information when they wished to avoid certain ingredients for diet reasons or when they were trying to control calories. Label information is obviously a very important tool for consumers in selecting foods that are consistent with nutrition recommendations. Information on the fat, fibre, and sodium content of foods, for example, will be important in encouraging consumers to select foods that reflect Canada's Guidelines for Healthy Eating.

The CIC recommends that the Department of National Health and Welfare:

B19 Monitor the effectiveness of the nutrition labelling program in assisting the public to act on Canada's Guidelines for Healthy Eating. Revise if needed.

B9 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products and initiate needed legislative or policy revisions in support of these guidelines.

B6 Strengthen communication and cooperation on nutrition and health policy, program development and implementation within the Department of National Health and Welfare.

The CIC recommends that the food industry:

F8 Expand the use of voluntary nutrition labelling to as many products as possible.

F9 Promote products on their nutritional benefits, using Canada's Guidelines for Healthy Eating to encourage customers to read nutrition labels.

While there appear to be few point-of-purchase nutrition education programs in Canada, these programs should be given a high priority for development. It has been shown that consumers make most of their food decisions at the point of purchase, such as the grocery store. The availability of nutrition information at the moment of decision–making appears to have a powerful influence. At the present time, government regulations restrict in many cases the development of point-of-purchase programs, which may help to create a supportive environment for consumers in their efforts to follow Canada's Guidelines for Healthy Eating. These regulations may need to be changed to allow for the development of such programs.

A6 The CIC recommends that all sectors initiate intersectoral cooperation to develop guidelines on the dissemination of health information associated with the sale of food products.

Supermarket Programs

Studies in the U.S. show that consumers make 80% of their food purchasing decisions at the supermarket (Point-of-Purchase Institute, quoted in Light *et al.*, 1989). Thus, the supermarket is a vital location for nutrition intervention programs designed to motivate healthful food selection. Light *et al.* (1989) report that nutrition education programs in supermarkets improve nutrition intervention programs in the community and create an environment in which consumers can use nutrition knowledge to make responsible food choices. Scharf *et al.* (1989), in an analysis of nutrition information in Canadian supermarkets, suggest that such programs should no longer be simply an "add–on", but should become an integral part of marketing programs.

There are few documented evaluations of supermarket nutrition information programs in Canada. Muller (1984, 1985) examined the impact on consumers of nutrition information on posters in Vancouver supermarkets. The posters listed information about the nutrients in five different products, comparing several brands. The posters were hung above the products in question in the supermarket aisles. Muller monitored the sales of the five products over a two-week period and found that consumers tended to buy the more nutritious foods when nutrition information was available, compared to control situations in which no information was provided. This experimental program is no longer offered; however, other supermarket nutrition information programs are being initiated, such as the *Heart Smart Grocery Program* from the Heart and Stroke Foundation of Canada, which began in late 1989. In addition, supermarket tours are gaining popularity in Canada as a method of educating consumers at the decision-making location. Kalina *et al.* (1989) developed a "Shop Smart Tour" program, which involves a two-hour supermarket educational tour led by a dietitian/nutritionist. Consumer demand for this program is high, as demonstrated by long waiting lists.

Several supermarket nutrition programs exist in the United States. A survey of 83 major grocery chains found that 36% had in-store nutrition information programs (Pennington *et al.*, 1988). Safeway Stores provide shoppers with printed nutrition information at each store's Nutrition Awareness Centre. Although this program also exists in Safeway Stores in Canada, no documentation was found on the program's effectiveness in motivating consumers to purchase more nutritious foods. Giant Foods, another U.S. food chain, developed an "Eat for Health Program" in collaboration with the American Cancer Institute. This program uses shelf labels to identify foods that are low in calories, fat, cholesterol, and sodium, and foods that are a good source of fibre. An evaluation of the program found that sales of shelf-labelled products increased by an average of four to eight percent over a two-year period, compared to sales for similar products in stores not using the program (Levy *et al.*, 1985). Other studies have also found that supermarket nutrition programs can motivate consumers to select more healthful foods (Mullis *et al.*, 198?; Glascoff *et al.*, 1986). Several of these in-store programs were developed with the assistance of the Food and Drug Administration, which has jurisdiction over shelf-labelling programs (Pennington *et al.*, 1988).

In a recent review of U.S. supermarket nutrition programs, Light *et al.* (1989) summarized the elements required for a successful program. They are as follows:

- messages relevant to consumer interests;
- shelf labels which direct consumers to healthful food choices;
- practical information from credible sources;
- highly visible programs that are easily distinguished from commercial food advertising;
- program awareness generated through mass-media advertising and community ties;
- program duration of one year or more; and
- effective working relationships with supermarket personnel.

> The CIC recommends that supermarket nutrition intervention programs be developed and evaluated as a strategy for implementing Canada's Guidelines for Healthy Eating.

Restaurant Programs

In 1988, Canadians spent roughly 39% of their food dollars on meals eaten away from home (restaurants, cafeterias or other food service locations), compared to the 1986 figure of 35.5% (Canadian Restaurant and Foodservices Association, 1989). Restaurants are therefore an important target for nutrition intervention programs. Only one published evaluation of a Canadian restaurant nutrition program was found in the literature available (Forster-Coull and Gillis, 1988).

The Nova Scotia Heart Foundation ran a six-week demonstration project in 21 Halifax restaurants. Menu items which were low in total fat, salt and sugar according to the 1977 Nutrition Recommendations for Canadians were identified by heart-shaped stickers. The program also included menu inserts, table tents, information sheets for wait staff, publicity flyers for distribution in the community and certificates for participating restaurants. Pre- and post-test data collected from restaurant patrons indicated an increase in the selection of heart healthy foods as a result of the program. Stickers on menus were found to be more successful than menu inserts in motivating heart healthy choices. Seventy percent of patrons were able to identify a characteristic of heart healthy foods at the end of the program, and 69% could name one or more heart healthy menu items. Restaurant managers and staff were generally very supportive of the program and felt that it met customer needs. They preferred menu stickers and table tents to menu inserts as methods of program delivery.

In Kamloops, British Columbia, a "Healthy Choices" restaurant dining guide has been developed as part of a community-based project involving local branches of the Heart Foundation, the Cancer Society, the Restaurant and Foodservices Association and the Chamber of Commerce (Kalina, 1989). The Ottawa-Carleton Health Department (1988) developed a similar

resource for restaurant diners as part of its "Heart Beat" program. The Heart and Stroke Foundation of Canada also developed a program to help restaurant patrons select healthy foods. Because this program was launched in 1989, evaluation data are not yet available.

A U.S. study (Wilbur *et al.*, 1981) evaluated the impact of nutrition information on the sales of low-calorie food items from vending machines. The study showed that vending locations displaying nutrition education materials (colourful graphics plus calorie information) sold a significantly higher proportion of lower calorie foods than did those with no nutrition information.

The CIC recommends that the food services sector:

G1 Develop a nutrition policy that establishes nutrition as a primary determinant in food purchasing and product development.

G6 Provide nutrition education to chefs, cooks, wait staff and other food services personnel to assist them in the implementation of Canada's Guidelines for Healthy Eating.

G7 Integrate nutrition education into formal training programs for food service managers, chefs, cooks, etc.

G8 Provide nutrition information to consumers about the nutritional value of foods served.

G9 Use menus and promotional materials to encourage food selection consistent with Canada's Guidelines for Healthy Eating.

G11 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

Mass-media Programs

Although studies have demonstrated that media campaigns can succeed in increasing nutrition knowledge (Axelson and Del Campo, 1978), these campaigns are primarily effective at the awareness stage of behaviour change (Flay *et al.*, 1980). Television campaigns combined with social support have been shown to be as effective as face-to-face programs in effecting changes in health behaviour (Flay, 1987; Kristiansson, 1981).

Several Canadian studies have identified the media (television, radio, magazines and newspapers) as principal sources of nutrition information for consumers (Sullivan and Schwartz, 1981; Zibrik *et al.*, 1981; Woolcott, 1983; Lambert-Lagace, 1983; GPMC, 1988; Woolcott *et al.*, 1988). The media provide opportunities to reach a wide audience at a low cost. However, there are concerns that consumers obtain much of their misinformation about nutrition from media sources. On the other hand, the media are powerful tools for marketing accurate health and nutrition messages, and are being used increasingly as such by government and non-government agencies.

Health and Welfare Canada (1982b) evaluated a national media campaign called *Eat Better, Feel Great / Mangez mieux, vous irez mieux*, which was designed to encourage adults to develop and maintain good eating habits in accordance with the 1977 Nutrition Recommendations for Canadians. The campaign consisted of both television ads and printed inserts in consumer magazines. The campaign stressed three main messages: *variety, energy balance* and *moderation*. Although consumers did report enhanced awareness of these concepts following the campaign, results of the evaluation are difficult to interpret, since 45% of respondents claimed to have seen, heard or read about the program before it was actually launched. After the campaign was launched, the awareness figure increased to 50%, and four months later to 58%. One conclusion drawn from the study was that the 1977 Nutrition Recommendations were stated in general rather than operational terms.

Several provincial governments (including Quebec, British Columbia, Saskatchewan and Ontario) have sponsored media campaigns to promote diet-health messages. PARTICIPaction has recently incorporated nutrition into its media campaigns, linking nutrition with physical activity as a road to health (Davis, 1987). Evaluation data for these campaigns were not found in the published literature.

The Canadian Dietetic Association has sponsored an annual nutrition campaign, entitled "Eat well, live well", for the past nine years. Evaluation data (Canadian Dietetic Association, 1989) indicate that Canadians are becoming increasingly aware of the healthy eating messages conveyed through these media campaigns and the role of the dietitian as a credible nutrition resource. In 1988, the "Eat well, live well" campaign was used successfully to communicate the message about healthy weights and the Body Mass Index (BMI) as a standard measure of body weight. This campaign was a successful collaboration among the CDA, the Department of National Health and Welfare, which developed the Healthy Weights strategy, and the private sector, which sponsored many of the campaign components.

In 1989, the Canadian Cancer Society launched a media campaign called "Cancer Prevention — You Can Have A Hand In It", in which dietary risk factors for cancer are addressed. Evaluation data for the campaign are not yet available.

> The CIC recommends that media strategies be integrated into comprehensive intervention programs designed to promote awareness and adoption of Canada's Guidelines for Healthy Eating.

Although little has been written on the topic in Canada, advertising has proven to be a powerful influence on consumers' food choices. One recent report (Goddard, 1988) found that sales of butter and milk increased when advertising was increased for these products. Similarly, increased promotion of food products that are consistent with Canada's Guidelines for Healthy Eating could result in increased sales and higher rates of consumption, which would benefit both manufacturers and consumers.

Current government regulations restrict the use by commercial companies of health information associated with specific foods. For example, foods may not be linked to the diseases specified in Schedule A of the *Food and Drugs Act*. While advertising could potentially play an important role in communicating nutrition messages to the public, it does not at the present time. Because of the high level of interest expressed by consumers in diet and nutrition (GPMC, 1988; 1989), advertisers are beginning to use nutrition as a selling point for their food products. In future, it may be possible for this sector to have a greater role in communicating sound nutrition messages, including Canada's Guidelines for Healthy Eating, to consumers.

> The CIC recommends that legislative and regulatory constraints on what the food industry may say in advertising, promotional or nutrition education materials be examined, and modified if necessary, to allow for promotion of Canada's Guidelines for Healthy Eating.

In controversial campaigns in both Canada and the U.S., Kellogg's joined forces with the Canadian Cancer Society and the National Cancer Institute to communicate the Diet and Cancer Guidelines on bran cereal packages and in advertising for cereals made by Kellogg's. Evaluation studies in both countries (Moyer, 1989; Freimuth *et al.*, 1988) indicated a positive impact on consumer knowledge and behaviour regarding fibre consumption. The campaigns resulted in more credibility for the cereal manufacturer as well as mass distribution of a diet and health message. However, controversy arose over the link made between diet and health in connection with a specific food product. Regulators in both Canada and the U.S. felt that the campaign violated current legislation. This demonstrates the need for guidelines that would enable manufacturers to incorporate health and nutrition information in their advertising programs without misleading the public.

The CIC recommends that the food industry act on the following recommendations for the promotion of Canada's Guidelines for Healthy Eating:

F5 Conduct promotional campaigns consistent with Canada's Guidelines for Healthy Eating.

F6 Support the efforts of health or nutrition organizations that are communicating Canada's Guidelines for Healthy Eating.

F7 Expand active partnerships in nutrition education and promotion activities with health professionals and non-governmental health organizations.

F10 Use labels and advertising to recommend smaller portions of high-fat foods.

F11 Use low-fat ingredients in label or promotional recipes, menu plans and serving suggestions.

F12 Participate in intersectoral initiatives to develop guidelines on the dissemination of health information associated with the sale of food products.

Community-based Programs

Since the publication of the study by seven countries of coronary heart disease (CHD) in the early 1970s (Keys, 1970), international interest in wide-ranging community-based intervention programs to prevent chronic diseases has increased. Community intervention programs to prevent CHD have actually been implemented in Europe and the United States, and may now be considered models for community intervention programs in Canada (Health and Welfare Canada, 1987).

Coronary heart disease is multifactorial in etiology, with dietary factors as some of the major contributors to risk. As a result, nutrition programming, together with tobacco control and primary care for the detection and control of hypercholesterolemia and hypertension, has been included in most community-based heart-health promotion programs. The Working Group on Prevention and Control of Cardiovascular Disease (Health and Welfare Canada, 1987) recognized the adoption of healthy dietary habits as the cornerstone of an effective cardiovascular disease prevention strategy.

The best known CHD prevention projects have been, or are being, implemented in North Karelia, Finland (Puska, 1985), California (Maccoby, *et al.*, 1977; Farquahar *et al.*, 1984), Minnesota (Mittelmark *et al.*, 1986) and Pawtucket, Rhode Island (Elder *et al.*, 1986). Other examples of community intervention programs outside of Canada include those in Maryland (Buxton and Pfeffer, 1987), Pennsylvania (Felix *et al.*, 1985), Vermont (Thompson *et al.*, 1987) and Wales (Nutbeam and Catford, 1987). Each of these large-scale intervention programs have taken a two-pronged approach: a population-based approach to cardiovascular disease prevention, in an attempt to lower risk factors for the entire population; and a high-risk approach, targeted to population sub-groups at greatest risk of cardiovascular disease.

The population-based approach to heart-health promotion addresses multiple risk factors (including nutrition), uses various strategies, attempts to have an impact on many levels of the community, implements programming in multiple locations (channels of communication and programming), and involves many organizations (such as public and private organizations and professional and voluntary organizations) as collaborators. Strategies include adult and youth education, professional education, mass media communications, environmental supports (including legislation), skills-training, and multiple risk-factor assessments.

Given that the approach to CHD prevention is community-wide, intervention program models are multilevel. Changing individual behaviour is the primary aim of these programs. However, it is

recognized that behavioural change on a large scale requires the creation of environments that are supportive of the development and adoption of healthy behaviour. For example, the Pawtucket Heart Health Program identified changes in the norms and structures at the community level, in policies and structures at the organizational level, in social networks at the group level and in behaviour at the individual level as factors to be addressed as part of intervention programs (Lefebvre *et al.*, 1987).

Consistent with the orientation on many levels, community-based intervention programs implement activities in many locations — in schools, workplaces, community centres, health facilities, food service establishments and retail stores — through the mass media. Such a broad programming strategy reaches people in their daily activities by creating healthy food environments. The Minnesota Heart Health Project developed an intervention program which attempted to effect changes in the food supply, at the point of purchase, and in worksite nutrition policies as examples of environmental strategies to promote sound nutritional practices (Glanz and Mullis, 1988).

Interventions directed at both the individual and the environment are consistent with principles of social and cognitive learning theory (Bandura, 1977, 1986) and recent policy directions of the federal government (Health and Welfare Canada, 1986; World Health Organization, 1986), which embrace a wide-ranging ecological and structuralist orientation to health promotion.

Community heart-health promotion initiatives also take advantage of existing resources and involve organizations in the community. In fact, community development and interorganizational planning have been essential elements of all the large-scale intervention programs mentioned above.

Because of the quasi-experimental nature of large-scale field studies to evaluate community heart-health intervention programs, no definite statements can be made about the effectiveness of the community-based approach in changing nutrition behaviour (Salonen, 1987; Leventhal et al., 1980). However, the North Karelia project did observe net decreases, over ten years, in the intake of saturated fatty acids from milk and fat spreads (20% net decrease for men, 14% net decrease for women), compared to a matched control community (Pietinen *et al.*, 1988). Positive changes in risk factor profiles and saturated fat intake were also observed in the Stanford Three Community study after two years of follow-up study (Farquahar *et al.*, 1977). The Minnesota, Pawtucket and Stanford Five Cities projects have yet to report the overall effects of their campaigns either on overall CHD risk or on the prevalence of specific risk factors.

The effectiveness of the comprehensive community-based approach to nutrition promotion has not been sufficiently evaluated. However, it appears to be the approach chosen most often on the basis of evaluation results available at this time, and for the theoretical reasons discussed. There appears to be no single type of intervention program that by itself is sufficient to support the behavioural changes required for promoting Canada's Guidelines for Healthy Eating. Given the complex nature of nutrition and food-related behaviour — production, marketing, purchasing, preparation and consumption — a comprehensive approach would appear necessary. Community-based CHD prevention programs provide a model for community-based nutrition intervention programs which could be used to prevent multiple disease end-points and to promote good health.

A5 The CIC recommends intersectoral initiatives to develop community-based nutrition programs to promote and support the implementation of Canada's Guidelines for Healthy Eating, which include school, workplace, mass media and point-of-purchase intervention programs.

The CIC recommends that the Department of National Health and Welfare:

B14 Support community-based nutrition initiatives by allocating substantial financial resources for large-scale demonstration projects in community nutrition; small-scale innovations; and the transfer of information about effective programs to other communities and agencies.

B15 Develop, in consultation with the provinces and territories, enabling systems supportive of community action on nutrition — including incentive grants, training, consultative services and communications mechanisms.

In summary, for Canadians to be successful in bringing about sustained behaviourial change that is consistent with Canada's Guidelines for Healthy Eating, efforts will be required in each of the settings described above, using methods that have been proven effective. The CIC recognizes the importance of coordinated and collaborative efforts that will mobilize professionals and the public alike to act on these guidelines. The Committee further recognizes the need for many partners to be involved in the planning, coordination, implementation and funding of intervention programs recommended in this report.

The CIC recommends that the Department of National Health and Welfare:

B1 Provide leadership for coordinating national implementation of the recommendations for action contained in the Report of the Communications/ Implementation Committee.

B2 Establish a Coordinating Group for Intersectoral Implementation of Canada's Guidelines for Healthy Eating that reports to the Minister of National Health and Welfare. Group members should include representatives from nutrition and health professional organizations, food and related industries, non-governmental organizations, other government departments and the public.

The CIC recommends that provincial, territorial and municipal governments:

C1 Provide leadership for coordinating provincial, territorial and municipal implementation of the recommendations for action contained in the Report of the Communications/Implementation Committee.

C2 Establish a Coordinating Group for Intersectoral Implementation of Canada's Guidelines for Healthy Eating. Group members should include representatives from nutrition and health professional organizations, food and related industries, non-governmental organizations, other government departments and the public.

More research is required in Canadian settings to determine the best methods of delivering nutrition intervention programs, and current nutrition programs should be evaluated. Research funding and advocacy will be necessary at all levels of government, and from the private and non-governmental health sectors, to assess awareness of and compliance with Canada's Guidelines for Healthy Eating.

The CIC recommends that the Department of National Health and Welfare:

B18 Encourage evaluation of nutrition and health promotion programs through funding.

B19 Monitor the effectiveness of the nutrition labelling program in assisting the public to act on Canada's Guidelines for Healthy Eating. Revise if needed.

B20 Develop a protocol that can be used by different sectors for regular monitoring of awareness of and compliance with Canada's Guidelines for Healthy Eating.

B21 Actively disseminate and publicize widely research results and implications as they relate to the implementation of Canada's Guidelines for Healthy Eating.

B22 Provide funding, through the National Health Research and Development Program, for nutrition research in support of the implementation of Canada's Guidelines for Healthy Eating.

Similar efforts are recommended for provincial, territorial and municipal governments.

The CIC recommends that these governments:

C9 Support evaluation of nutrition and health promotion programs through funding.

C10 Encourage the development of strategic grants to fund research in support of implementation of Canada's Guidelines for Healthy Eating.

10.
Nutrition Policy: Its Role in Healthy Public Policy

Canada has shown leadership at home and internationally in the area of health promotion policy (Spasoff, 1989). Three major policy documents illustrate its efforts as a leader: *A New Perspective on the Health of Canadians* (Health and Welfare Canada, 1974); *The Ottawa Charter on Health Promotion* (World Health Organization, Health and Welfare Canada, Canadian Public Health Association, 1986); and *Achieving Health for All* (Health and Welfare Canada, 1986). The Second International Conference on Health Promotion (World Health Organization; Government of Australia, 1988) recommended that a food and nutrition policy integrating agricultural, economic and environmental factors be a priority of all governments. In Canada, Spasoff (1989) argues that nutrition is an ideal area in which to demonstrate the principles of health promotion and healthy public policy. The Report of the Communications/Implementation Committee provides direction for healthy public policy in nutrition. The first stage of such a policy is the establishment of goals for nutrition and diet. The updated SRC Nutrition Recommendations, and their translation as Canada's Guidelines for Healthy Eating, establish nutrition goals for Canadians. Many partners, including some new ones, from various backgrounds must be involved in establishing and implementing healthy public policy regarding nutrition (Knox, 1989). The Recommendations for Action by the CIC were the result of consultations with many partners who share ownership of the recommendations and responsibility for their implementation.

The Communications/Implementation Committee identified the need for action on nutrition policies on the part of all sectors. Governments at the federal, provincial, territorial and municipal levels should initiate nutrition policies in such settings as schools and the workplace. Food and food services industries need to establish policies that encourage the development and marketing of a wide variety of foods that are consistent with Canada's Guidelines for Healthy Eating. Nutrition and other health professionals and their organizations, as well as consumers, should be active partners in initiating and supporting nutrition policies at all levels. Regulatory strategies should also be used to support healthy public policy (Hopkins, 1989). The CIC makes several recommendations in support of the implementation of Canada's Guidelines for Healthy Eating that affect regulations.

B5 The CIC recommends that the Department of National Health and Welfare advocate for and coordinate efforts in federal, provincial, territorial and municipal governments to develop coordinated food and nutrition policy linking nutrition and health with agriculture, education, fisheries, social services, environment and other relevant sectors.

In order to facilitate the development of coordinated policies and programs at the national level,

the CIC recommends to the Department of National Health and Welfare that it:

B6 Strengthen communication and cooperation on nutrition and health policy and program development and implementation within the Department of National Health and Welfare.

B7	Strengthen communication and coordination on issues of nutrition and food among the departments of National Health and Welfare, Agriculture, Consumer and Corporate Affairs, Fisheries and Oceans and National Defence.
B8	Assess and revise, where necessary, public policy in areas such as free trade, sales tax reform, pesticide review, food commodity pricing and land use in order to support implementation of Canada's Guidelines for Healthy Eating.

11. Conclusions

Canada has a great opportunity to improve public health for the 1990s with its Guidelines for Healthy Eating. Major steps are needed to close the wide gaps between current estimated food consumption practices and those recommended by the updated Nutrition Recommendations, translated as Canada's Guidelines for Healthy Eating. Evidence indicates that some Canadians are already making dietary changes that are consistent with these guidelines and that nutrition awareness and interest is high. Even so, additional efforts must be made to bring more Canadians into compliance with the Guidelines in order to promote and maintain health while reducing the risk of nutrition-related diseases.

Communication and implementation of the Guidelines requires many strategies and involves many partners. The strategies for implementation fall into the following areas:

- development of food and nutrition policies;
- collaboration and coordination among many partners;
- development of multisectoral, community-based nutrition intervention programs;
- creation of supportive environments in locations such as schools, worksites, restaurants and supermarkets, and through legislation and policy changes where appropriate; and
- increased nutrition research and surveillance efforts.

The key partners identified for implementation include governments at the federal, provincial, territorial and municipal levels, food and food services industries, nutrition and other health professionals and their professional organizations, non-governmental organizations and the public.

The Core Recommendations for Action, for which all of these sectors are responsible, include the following:

A1 Initiate coordinated national food and nutrition policy, linking nutrition and health with agriculture, education, fitness, fisheries, social services, environment and other relevant sectors.

A2 Adopt and promote Canada's Guidelines for Healthy Eating as the single set of nutrition recommendations for communication to and implementation by the healthy public over two years of age.

A3 Integrate Canada's Guidelines for Healthy Eating into nutrition programs and materials.

A4 Develop and ensure continued availability of targeted nutrition programs and materials to meet the needs of the population, taking into account sociodemographic and cultural characteristics.

A5 Initiate intersectoral initiatives to develop community-based nutrition programs to promote and support implementation of Canada's Guidelines for Healthy Eating, which include school, workplace, mass-media and point-of-purchase intervention programs.

A6 Initiate intersectoral cooperation to develop guidelines on the dissemination of health information associated with the sale of food products.

A7 Increase research efforts and support a national nutrition surveillance and monitoring system.

A8 Review the Nutrition Recommendations and Communications/Implementation Strategies every five years.

12. References

Adrian, M., Jull, P., and Williams, R. 1989. *Statistics on Alcohol and Drug Use in Canada and Other Countries, Data Available by 1988. Volume I: Statistics on Alcohol Use.* Toronto: Alcoholism and Drug Addiction Research Foundation.

American Dietetic Association, Society for Nutrition Education, U.S. Department of Health and Human Services. 1986. *Worksite Nutrition: A Decision-Maker's Guide.* Chicago: ADA.

Anderson, D. and Reddin, E. 1982. *Adolescents and their Food: Changes Through Nutrition Education and School Lunch.* Charlottetown, P.E.I.: Department of Home Economics, University of Prince Edward Island.

Axelson, J.M. and Del Campo, D. 1978. "Improving Teenagers' Nutrition Knowledge Through Mass Media." *Journal of Nutrition Education* 10:30-33.

Bandura, A. 1977. *Social Learning Theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. 1986. *Social Foundations of Thought and Action.* Englewood Cliffs, NJ: Prentice-Hall.

Bly, J.L., Jones, R.C. and Richardson, J.E. 1986. "Impact of Worksite Health Promotion on Health Care Costs and Utilization." Evaluation of Johnson and Johnson's Live for Life Program. *Journal of the American Medical Association* 256:3235-3240.

British Columbia Ministry of Health. 1988. *School Food: Giving Students a Better Break.* Victoria: Ministry of Health.

Buffam, D. 1988. *Take Heart: Worksite Heart Health in Action.* Red Deer, Alberta: Red Deer Health Unit.

Buxton, T. and Pfeffer, J. 1987. "The Healthy People Maryland Project: Reducing the Risk of Heart Disease in Maryland." *Journal of Public Health Policy* 8:475-491.

Calamai, P. 1987. *Broken Words: Why Five Million Canadians are Illiterate.* Toronto: Southam Newspaper Group.

Campbell, C., Katamay, S. and Connolly, C. 1988. "The Role of Nutrition Professionals in the Hunger Debate." *Journal of the Canadian Dietetic Association* 49:230-235.

Canada Fitness Survey. 1983. *Fitness and Lifestyle in Canada.* Ottawa: Canada Fitness Survey.

Canadian Education Association. 1989. *Food for Thought: School Board Nutrition Policies and Programs for Hungry Children.* Toronto: Canadian Education Association.

Canadian Fitness and Lifestyle Research Institute. 1989. *Campbell's Survey on Well-Being in Canada.* Ottawa: Canadian Fitness and Lifestyle Research Institute.

Canadian Hospital Association. 1987. *Health Promotion in Canadian Hospitals: A Study Conducted by the Canadian Hospital Association.* Ottawa: Canadian Hospital Association.

Canadian Restaurant and Foodservices Association. 1988. *Food Services Facts.* Toronto: Canadian Restaurant and Foodservices Association.

Connell, D.B., Turner, R.R. and Mason, E.F. 1985. "Summary of Findings of the School Health Education Evaluation: Health Promotion Effectiveness, Implementation, and Costs." *Journal of School Health* 55:316-321.

Creative Research Group. 1989. *Communicating Nutrition Concepts.* Report prepared for Health and Welfare Canada. Ottawa: Health Services and Promotion Branch. (Unpublished).

Cronier, C. 1987. *Nutrition Education in Schools of the Regional Municipality of Ottawa-Carleton: An Evaluation of Curricula Content and School Food Policies*. Ottawa: Ottawa-Carleton Health Department.

Davey, B.H. 1987. "The Changing Structure of Canadian Society: Implications for Food." *Food Market Commentary* 9(2):17-24.

Davis, B. 1987. "PARTICIPaction Adds a Taste of Nutrition." *Journal of the Canadian Dietetic Association* 48:239-242.

Davis, B. 1989. "Community Nutrition in Canada: An Overview." *Journal of the Canadian Dietetic Association* 50:85-88.

Davis, B. and Horgen, I. 1988. "Project Apex Pilot Test." Presentation at the Annual Conference of the Society for Nutrition Education, Toronto.

Eisler, C., Walsh, M.T. and Favora, E. 1985. "The Vancouver School Board Nutrition Policy: Progress to Date." *Journal of the Canadian Dietetic Association* 46:64-66.

Elder, J.P., McGraw, S.A., Abrams, D.B., Ferreira, A., Lasater, T.M., Longpre, H., Peterson, G.S., Schwertfeger, R. and Carlton, R.A. 1986. "Organizational and Community Approaches to Community-wide Prevention of Heart Disease: The First Two Years of the Pawtucket Heart Health Program." *Preventive Medicine* 15:107-117.

Farquahar, J.W., Maccoby, N., Wood, P.D., Alexander, J.K., Breitrose, H., Brown, B.W., Haskell, W.L., McAlister, A.L., Meyer, A.J., Nash, J. and Stern, M.P. 1977. "Community Education for Cardiovascular Health." *The Lancet* 1:1192-1195.

Farquahar, J., Fortmann, S., Maccoby, N. *et al.* 1984. "The Stanford Five City Project: An Overview." In *Settings for Health Promotion in Behavioural Health: A Handbook for Health Enhancement and Disease Prevention*, ed by S.Weiss. Silver Spring, Maryland: John Wiley.

Federal-Provincial Subcommittee on Nutrition. 1981. Working paper on field-level nutrition positions in government public/ community health services. *Journal of the Canadian Dietetic Association* 42: 120-126.

Felix, M.R.J., Stunkard, A.J., Cohen, R.Y. and Cooley, N.B. 1985. "Health Promotion at the Workplace. Volume 1, A process for establishing programs." *Preventive Medicine* 14:99-108.

Flay, B.R., DiTecco, D. and Schlegel, R.P. 1980. "Mass Media in Health Promotion: An Analysis Using Extended Information-processing Model." *Health Education Quarterly* 7:127-147.

Flay, B.R. 1987. "Mass Media and Smoking Cessation: A Critical Review." *American Journal of Public Health* 77:153-160.

Forster-Coull, L. and Gillis, D. 1988. "A Nutrition Education Program for Restaurant Patrons." *Journal of Nutrition Education* 20:22B-22C.

Foshee, V., McLeroy, K.R., Summer, S.K. and Bibeau, D.L. 1986. "Evaluation of Worksite Weight Loss Programs: A Review of Data and Issues." *Journal of Nutrition Education* 18(suppl.):38-43.

Frankle, R.T., McIntosh, J., Bianchi, M. and Kane, J.E. 1986. "The Weight Watchers at Work Program." *Journal of Nutrition Education* 18(suppl.):44-47.

Freimuth, V.S., Hammond, S.L. and Stein, J.A. 1988. "Health Advertising: Prevention for Profit." *American Journal of Public Health* 78:557-561.

Gatchell, S. 1989. *Job satisfaction and self-perceived competence of Canadian public health nutritionists*. Master's thesis, University of Guelph, Ontario.

Gilbert, R.M. 1981. "Caffeine: Overview and Anthology." In *Nutrition and Behavior*. ed. by S.A. Miller, 145-166. Philadelphia: Franklin Institute Press.

Glanz, K. and Mullis, R. 1988. "Environmental Interventions to Promote Healthy Eating: A Review of Models, Programs and Evidence." *Health Education Quarterly* 15:395-415.

Glascoff, M.A., Taylor, S. and Glascoff, D.W. 1986. "A Social Marketing Approach to Reducing Salt Intake." *Health Education* 17(2):11-14.

Goddard, E.W. 1988. *The Impact of Selected Generic Advertising Programs in the Canadian Dairy Industry*. Guelph, Ontario: University of Guelph, Department of Agricultural Economics and Business.

Grocery Products Manufacturers of Canada. 1979. *Food and Nutrition: Report on Survey of the Attitudes of Mothers*. Don Mills, Ontario: Grocery Products Manufacturers of Canada.

Grocery Products Manufacturers of Canada. 1988. *Grocery Attitudes of Canadians 1988*. Don Mills, Ontario: Grocery Products Manufacturers of Canada.

Grocery Products Manufacturers of Canada. 1989. *Grocery Attitudes of Canadians 1989*. Don Mills, Ontario: Grocery Products Manufacturers of Canada.

Health and Welfare Canada. 1973. *Nutrition Canada National Survey*. Ottawa: Information Canada.

Health and Welfare Canada. 1974. *A New Perspective on the Health of Canadians: A Working Document*, by Marc Lalonde. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1979. *Report on Nutrition Concepts Evaluation Study*. Ottawa: Health Promotion Directorate.

Health and Welfare Canada and Statistics Canada. 1981. *The Health of Canadians: Report of the Canada Health Survey*. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1982a. *Canada's Food Guide Handbook* (revised). Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1982b. *Nutrition Programs Unit preliminary report: Evaluation of 1981-82 nutrition media campaign*. Ottawa: Health Promotion Directorate. (Unpublished).

Health and Welfare Canada. 1983. *Recommended Nutrient Intakes for Canadians*. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1986. *Achieving Health for All: A Framework for Health Promotion*. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1987. *Promoting Heart Health in Canada: Report of the Working Group on the Prevention and Control of Cardiovascular Disease*. Ottawa: Federal-Provincial Advisory Committee on Community Health.

Health and Welfare Canada. 1988a. *Promoting Healthy Weights: A Discussion Paper*. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1988b. *Preventive Dental Services*. 2nd ed. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1988c. *Canada's Health Promotion Survey: Technical Report*. ed. by I. Rootman, R. Warren, T. Stephens and L. Peters. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1989a. *The Active Health Report on Fitness, Nutrition and Safety*. Ottawa: Minister of Supply and Services Canada.

Health and Welfare Canada. 1989b. *Nutrition Labelling — The Inside Story* (pamphlet). Ottawa: Minister of Supply and Services Canada.

Hopkins, J.M. 1989. "Achieving Health for All: A Regulatory Perspective." *NIN Rapport* 4(1):5.

Johannsen, E., Robbins, L., Hewston, G., Zafiriou and Hunt, L. 1989. "Demography and Socioeconomic Bases of Food Demand — What Does the Future Hold?" *Food Market Commentary* 11(2):27-44.

Johnson, D.W. and Johnson, R.T. 1985. "Nutrition Education: A Model for Effectiveness, a Synthesis of Research." *Journal of Nutrition Education* 17(suppl.)

Kalina, L. 1989. "Healthy Choices: A Restaurant Guide for Healthy Eating in Kamloops" (abstract). *Journal of the Canadian Dietetic Association* 50:186.

Kalina, L., O'Donnell, L. and Thibault, C. 1989. "Shop Smart Tours — Business Opportunity for the 1990's" (abstract). *Journal of the Canadian Dietetic Association* 50:187.

Kaufman, M. ed. 1982. *Personnel in Public Health for the 1980's.* MacLean, VA: Association of State and Territorial Health Officials Foundation.

Kaufman, M. 1986. "Preparing Public Health Professionals to Meet the Future." *Journal of the American Dietetic Association* 86:511-514.

Kent, G. 1988. "Nutrition Education as an Instrument of Empowerment." *Journal of Nutrition Education* 20:193-195.

Keys, A. 1970. "Coronary Heart Disease in Seven Countries." *Circulation* 41(suppl. 1).

King, A.J.C., Robertson, A.S. and Warren, W.K. 1984. *Summary Report, Canada Health Knowledge Survey: 9-, 12- and 15-year-olds* (1982-83). Ottawa: Health Promotion Directorate, Health and Welfare Canada.

King, A.J.C., Robertson, A.S. and Warren, W.K. 1986. *Summary Report, Canada Health Attitudes and Behaviour Survey: 9-, 12- and 15-year-olds* (1984-85). Ottawa: Health Promotion Directorate, Health and Welfare Canada.

Knox, M.H. 1989. "Healthy Public Policy: What is it? Why are we discussing it now? What are the implications for nutrition?" *NIN Rapport* 4(1):1-2.

Kristiansson, K. 1981. "Multimedia Instruction: High Learning, Low Cost." *Journal of Extension* 19:9-13.

Labonte, R. 1989. "Community Empowerments: The Need for Political Analysis." *Canadian Journal of Public Health* 80:87-88.

Lambert-Lagace, L. 1983. "Media, Nutrition Information, and Consumer Reactions." *Journal of Nutrition Education* 15:6-7.

La Rosa, J.H. Goor, R. and Haines, C.M. 1986. "National Cholesterol Education Program: Implications for the Workplace." *Journal of Nutrition Education* 18(suppl.): 50-53.

Latchford, L.M. 1986. *Food for Thought: A Report on Nutrition Education Programs in City of Toronto Schools.* Toronto: Educational Opportunity Fund.

Lefebvre, C.R., Lasater, T.M., Carleton, R.A. and Peterson, G. 1987. "Theory and Delivery of Health Programming in the Community: The Pawtucket Heart Health Program." *Preventive Medicine* 16:80-95.

Leventhal, H., Safer, M.A., Cleary, P.D. and Gutmann, M. 1980. "Cardiovascular Risk Modification by Community-based Programs for Lifestyle Change: Comments on the Stanford Study." *Journal of Consulting and Clinical Psychology* 48:150-158.

Levy, A.S., Mathews, O., Stephenson, M., Tenney, J.E. and Schucker, R.E. 1985. "The Impact of a Nutrition Information Program on Food Purchases." *Journal of Public Policy Marketing* 4:1-13.

Liefeld, J.P. 1983. *Nutrition labelling and consumer behaviour: A review of the evidence.* Ottawa: Health and Welfare Canada, Health Protection Branch, Bureau of Nutritional Sciences. (Unpublished).

Light, L., Portnoy, B., Blair, J.E. Smith, J.M. Rodgers, A.B. Tuckermanty, E., Tenney, J. and Mathews, O. 1989. "Nutrition Education in Supermarkets." *Family and Community Health* 12(1):43-52.

Liston, A.J. 1989. "Nutrition and Free Trade." Presentation to Annual Meeting of Members of the National Institute of Nutrition, Toronto, April.

Maccoby, N., Farquahar, J.W., Wood, P.D. and Alexander, J. 1977. "Reducing the Risk of Cardiovascular Disease: Effects of a Community-based Campaign on Knowledge and Behaviour." *Journal of Community Health* 3:100-114.

Maxwell, C. and Simkins, S. 1985. *Background Paper on Nutrition for the Disadvantaged.* Ottawa: Health and Welfare Canada, Health Promotion Directorate.

McEwen, B.E. and Kieren, D.K. 1984. "Evaluation of the Nutrition at School Program: Teacher Involvement." *Canadian Home Economics Journal* 34:102-108.

Mittelmark, M.B., Luepker, R.V., Jacobs, D.R., Bracht, N.F., Carlaw, R.W., Crow, R.S., Finnegan, J.M., Grimm, R.H., Jeffery, R.W., Kline, F.G., Mullis, R.M., Murray, D.M., Pechacek, T.F., Perry, C.L., Pirie, P.L. and Blackburn, H. 1986. "Community-wide Prevention of Cardiovascular Disease: Education Strategies of the Minnesota Heart Health Program." *Preventive Medicine* 15:1-17.

Mongeau, E., Cambiotti, L.W., Gelinas, M.D., Ledoux, M. and Lambert, J. 1989. *Consommation de sodium dans une population adulte de Montréal.* (Unpublished).

Moyer, C. 1989. "A Report of a Nutrition Education Program." *Proceedings of the First National Conference on Diet and Cancer*, 1987. Toronto: Canadian Cancer Society.

Muller, T.E. 1984. "The Use of Nutritive Composition Data at the Point of Purchase." *Journal of Nutrition Education* 16:137-141.

Muller, T.E. 1985. "Structural Information Factors which Stimulate the Use of Nutrition Information in a Field Experiment." *Journal of Marketing Research* 22:143-157.

Mullis, R.M., Hunt, M.K., Foster, M., Hachfeld, L., Lansing, D., Snyder, P. and Pirie, P. 1987. "The Shop Smart for Your Heart Grocery Program." *Journal of Nutrition Education* 19:225-228.

Murray, T.K. and Rae, J.R. 1979. "Nutrition Recommendations for Canadians." *Canadian Medical Association Journal* 120:1241-1242.

Myres, A.W. and Kroetsch, D. 1978. "The Influence of Family Income on Food Consumption Patterns and Nutrient Intake in Canada." *Canadian Journal of Public Health* 69:208-221.

National Institute of Nutrition. 1987. "Caffeine: A Perspective on Current Concerns." *NIN Review* #2.

Nelson, D.J., Senneh, L., Lefebvre, R.C., Loiselle, L., McClements, L. and Carlton, R.A. 1987. "A Campaign Strategy for Weight Loss at Worksites." *Health Education Research, Theory and Practice* 2:27-31.

Nova Scotia Department of Health and Department of National Health and Welfare. 1987. *Report of the Nova Scotia Heart Health Survey*. Halifax: Nova Scotia Department of Health.

Nova Scotia Department of Health. 1989 (rev.). *Guidelines on the Sale of Foods in Nova Scotia Schools*. Halifax: Nova Scotia Department of Health.

Nova Scotia Nutrition Council. 1988. *How do the Poor Afford to Eat? An Examination of Social Assistance Food Rates in Nova Scotia*. Halifax: Nova Scotia Nutrition Council.

Nutbeam, D. and Catford, J. 1987. "The Welsh Heart Programme Evaluation Strategy: Progress Plans and Possibilities." *Health Promotion* 2:5-18.

O'Loughlin, J., Boivin, J.-F., and Suissa, S. 1988. "A Survey of Worksite Health Promotion in Montreal." *Canadian Journal of Public Health* 79(suppl. 1):5-10.

Ontario Ministry of Health. 1976. *A Working Paper on School Food Services*. Toronto: Ontario Ministry of Health.

Ottawa-Carleton Department of Health. 1988. *Ottawa-Carleton Heart Beat Dining Guide*. Ottawa: Ottawa-Carleton Department of Health.

Pennington, J., Wisniowski, L. and Logan, L. 1988. "In-store Nutrition Information Programs." *Journal of Nutrition Education* 20:5-10.

Peterson, R.D. 1984. "Survey Results of Consumer Understanding and Usage of Nutrition Labels on Ready-to-eat Breakfast Cereals in Canada." *Journal of the Canadian Dietetic Association* 45:344-349.

Peterson, G.S., Lefebvre, R.C., Ferreira, A. *et al.* 1986. "Strategies for Cholesterol Lowering at the Worksite." *Journal of Nutrition Education* 18(suppl.):54-57.

Pietinen, P., Nissinen, A., Vartiainen, E. *et al.* 1988. "Dietary Changes in the North Karelia Project (1972-1982)." *Preventive Medicine* 17:183-193.

Powell, M. 1988. "Fostering Public Participation." *Health Promotion* 27(2):5-8.

Puska, P.P., Nissinen, A., Tuomilehto, J. *et al.* 1985. "The Community-based Strategy to Prevent Coronary Heart Disease: Conclusions from the Ten Years of the North Karelia Project." *Annual Review of Public Health* 6:147-193.

Quebec. 1988. "Nutrition in Quebec Schools." *Health Promotion* 26(3):19-20.

Quigley, H. 1986. "L.L. Bean Cholesterol-Reduction Program." *Journal of Nutrition Education* 18(suppl.):58-59.

Rae, J. and Nielsen, H. 1980. "Public Opinions and Perceptions of Recommendations Used in Nutrition Education." *Journal of the Canadian Dietetic Association* 41:85-92.

Reid, D.J. and Dunkley, G.C. 1989. "Weight Control in the Workplace: A Needs Assessment for Men." *Canadian Journal of Public Health* 80:24-27.

Riches, G. 1989. "Food Banks, Hunger, and Economic Growth: Charity or Collective Social Security in the 1990's." *NIN Rapport* 4(3):5.

Rickmond, K. 1986. "Introducing Heart-healthy Foods in a Company Cafeteria." *Journal of Nutrition Education* 18(suppl.):63-65.

Robbins, L.G. and Robichon-Hunt, L. 1989. "The Agriculture Canada Nutritious Food Basket and the Thrifty Nutritious Food Basket, 1989." *Food Market Commentary* 11(1): 31-42.

Salonen, J.T. 1987. "Did the North Karelia Project Reduce Coronary Mortality?" *The Lancet* 2:269.

Scharf, J.N., Leblanc, E.L. and King, N. 1989. "Nutrition Information in the Supermarket." *Canadian Home Economics Journal* 39:103-105.

Schmitz, M.F. and Fielding, J.E. 1986. "Point-of-purchase Nutrition Labelling: Evaluation in a Worksite Cafeteria." *Journal of Nutrition Education* 18(suppl.):65-68.

Schwartz, N. and Clampett, D.M. 1983. "Evaluation of a Nutrition Innovation in Secondary School Home Economics Education." *Human Nutrition: Applied Nutrition* 37A:180-188.

Schwartz, N.E. 1989. "The President's Corner." *NIN Rapport* 4:3.

Shannon, B., Demicco, K. and Fishman, L., eds. 1986. *A Guide to Enhancing Nutrition at the Worksite*. College Park, PA: Pennsylvania State University.

Shannon, B., Linton, B., Hsu, L., Rollins, P. and Schwartz, R.M. 1986. "Development of a Nutrition and Weight-control Program for Atlantic Richfield Company Employees." *Journal of Nutrition Education* 18(suppl.):47-50.

Spasoff, R.A. 1989. "The Role of Nutrition in Healthy Public Policy." *NIN Rapport* 4(1):6-7.

Statistics Canada. 1977. *Urban Family Food Expenditure in Canada, 1974*. Ottawa: Minister of Supply and Services Canada.

Statistics Canada. 1985. *Family Food Expenditure in Canada, 1982*. Ottawa: Minister of Supply and Services Canada.

Statistics Canada. 1986. *Family Food Expenditure in Canada, 1984*. Ottawa: Minister of Supply and Services Canada.

Statistics Canada. 1987. *Federal Electoral Districts and Census Enumeration Areas*. Ottawa: Minister of Supply and Services Canada.

Statistics Canada. 1989. *Family Food Expenditure in Canada, 1986*. Ottawa: Minister of Supply and Services Canada.

Statistics Canada. *Apparent Per Capita Food Consumption in Canada*, Catalogue Number 32-229/230. Ottawa: Minister of Supply and Services Canada.

Sullivan, A.D. and Schwartz, N.E. 1981. "Attitudes, Knowledge, and Practice Related to Diet and Cardiovascular Disease." *Journal of the Canadian Dietetic Association* 42:169-177.

Sumner, S.K., Schiller, E.L., Marr, E.R. and Thompson, D.I. 1986. "A Weight Control and Nutrition Education Program for Insurance Company Employees." *Journal of Nutrition Education* 18(suppl.):60-62.

Thomas, M. 1989. "A Workplace Program for Nutrition Awareness." *Proceedings of the First National Conference on Diet and Cancer, 1987*. Toronto: Canadian Cancer Society.

Thompson, E.B., Hamrell, M. and Coffin, R.R. 1987. "The Heart Healthy Vermonter Program." *Journal of Public Health Policy*. Spring, 36-43.

Vandenbygaart, E. and Woolcott, D.M. 1985. "Secondary School Nutrition Education: A Survey of Ontario Teachers." *Ontario Family Studies-Home Economics Educators' Association Journal* 4:48-60.

Weis, E.H. and Klein, C.L. 1987. "A Synthesis of Research on Nutrition Education at the Elementary School Level." *Journal of School Health* 57:8-13.

Welsh, J. 1989. "Hunger in Canada: Consequences and Challenges." *NIN Rapport* 4(3):1-2.

Wilbur, C.S., Zheerblatt, S.M., Pinsky, J.L. and Zheerblatt, S. 1981. "Healthy Vending: A Cooperative Pilot Research Program to Stimulate Good Health in the Marketplace." *Preventive Medicine* 10:85-93.

Woolcott, D.M. 1982. *Nutrition awareness of rural and urban women*. Guelph, Ontario: University of Guelph, Department of Family Studies. (Unpublished).

Woolcott, D.M. 1983. "Nutrition concerns and information-seeking behaviour of rural and urban women." Presentation to the Annual Meeting of the Society for Nutrition Education. Denver, Colorado.

Woolcott, D.M. 1989. "An Overview of Canadians' Current Knowledge, Attitudes and Behaviour in Regard to Diet." *Proceedings of the First National Conference on Diet and Cancer, 1987*. Toronto: Canadian Cancer Society.

Woolcott, D.M. Schwartz, N. and Lowry, C. 1988. "Nutrition opinions and information-seeking behaviour of household food managers." Presentation to the 1988 Annual Meeting of the Society for Nutrition Education. Toronto, Ontario.

World Health Organization, Health and Welfare Canada, Canadian Public Health Association. 1986. "Ottawa Charter for Health Promotion." *Canadian Journal of Public Health* 77:426-430.

World Health Organization, Government of Australia, 1988. "The Adelaide Recommendations: Healthy Public Policy." *Health Promotion*, 3:183-186.

Zibrik, D., Peters, H.F. and Kuhnlein, H.V. 1981. "Knowledge and Attitudes of Vancouver Residents Toward Food Additives." *Canadian Journal of Public Health* 72:49-54.

Zifferblatt, S.C. Wilbur, C. and Pinsky, J. 1980. "Changing Cafeteria Eating Habits." *Journal of the American Dietetic Association* 76:15-20.

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Committee members also acknowledge the generous support of their employing agencies, which donated hundreds of hours to this committee.

Finally, the CIC is especially indebted to the groups and organizations listed in Appendix A, whose input was invaluable.

Appendix A

Mandate and Procedures of the Communications/Implementation Committee

Mandate and Procedures of the Communications/Implementation Committee

On October 1, 1987, the Honourable Jake Epp, Minister of National Health and Welfare, announced the appointment of the Communications/Implementation Committee and the Scientific Review Committee and charged them with "the review and revision of nutrition recommendations for a healthy Canadian population to ensure up-to-date nutrition recommendations for professionals and the public which will promote and maintain health and reduce the risk of nutrition-related diseases".

The mandate of the Communications/Implementation Committee was to recommend to the Department of National Health and Welfare the expression of updated nutrition recommendations as dietary advice for the consumer and implementation strategies by:

- analyzing the appropriateness and effectiveness in the Canadian setting of existing activities, methods and materials which communicate scientific findings as dietary advice, that is, nutrition and dietary guidelines, and reviewing *Canada's Food Guide*;
- analyzing the updated nutrition recommendations in light of Canadian eating habits, food consumption and buying patterns and food production;
- translating scientific recommendations into proposed dietary advice for use by the healthy Canadian public;
- identifying implementation strategies for the public, professionals, industry, and health-related organizations;
- consulting with relevant key organizations;
- coordinating activities with the Scientific Review Committee to ensure clarity, feasibility, completeness and scientific accuracy in the translation of the Nutrition Recommendations; and
- preparing a report which contains the proposed dietary advice, appropriate ways to present the advice, and implementation strategies for submission to the Minister of the Department of National Health and Welfare.

Processes Used by the Committee

Ten formal meetings of the Communications/Implementation Committee were held over a two-year period; two of these were joint meetings with the Scientific Review Committee.

Two task groups and a technical advisory group were appointed by the CIC to assist in carrying out its mandate. The Task Group on *Canada's Food Guide*, the Technical Advisory Group on *Canada's Food Guide* and the Task Group on Food Consumption submitted reports to the CIC, executive summaries of which are found in Appendices C, D and E, respectively. In addition, a consumer research study was done and the CIC used the information collected to develop messages and strategies for the public. Summary highlights of this study are found in Appendix F.

While the Committee members themselves had expertise in a wide range of related fields, they participated in large-scale consultations with nutrition and other health professionals, as well as industry, in carrying out the Committee's mandate. The Committee received input from nutritionists, universities, professional associations, industry groups and health-related organizations. The following groups made written and/or oral submissions to the Committee:

Advisory Committee on the Development of National Guidelines on Preschool Nutrition

Bakery Council of Canada

Beef Information Centre

British Columbia Dairy Foundation

Appendix A

British Columbia Nutrition Council

Canadian Cancer Society

Canadian Dental Hygienists Association

Canadian Diabetes Association

Canadian Dietetic Association

Canadian Egg Marketing Agency

Canadian Hypertension Society

Canadian Medical Association

Canadian Nurses Association

Canadian Paediatric Society

Canadian Restaurant and Foodservices Association

Canadian Society for Nutritional Sciences

Canadian Sugar Institute

Consumers' Association of Canada

Dairy Bureau of Canada

Federal/Provincial/Territorial Group on Nutrition

Fresh for Flavour Foundation

Grocery Products Manufacturers of Canada

Institute of Edible Oil Foods

Manitoba Dietitians and Nutritionists

McGill University, School of Dietetics and Human Nutrition

Nova Scotia Nutrition Council

Nutrition Committees of the provincial dietetic associations

Ontario Milk Marketing Board

Ontario Society for Nutritionists in Public Health

Osteoporosis Society of Canada

PARTICIPaction

Public Health Nutritionists of Quebec

University of British Columbia, School of Family and Nutritional Sciences

University of Guelph, Division of Applied Human Nutrition

University of Saskatchewan, Division of Nutrition and Dietetics

University of Toronto, Department of Nutritional Sciences

University of Western Ontario, Department of Home Economics

Site visits were made to the Nova Scotia Heart Health Project, the United States Department of Agriculture, the Human Nutrition Information Service in Baltimore (Maryland), the Pawtucket Heart Health Project (Rhode Island), and the Minnesota Heart Health Project.

Appendix B

Report of the Scientific Review Committee:
Executive Summary

Report of the Scientific Review Committee: Executive Summary

The Nutrition Recommendations for Canadians are a product of a review of the literature on nutrient requirements and on the various relationships linking nutrition and disease. They are intended to provide guidance in the selection of a dietary pattern that will supply recommended amounts of all essential nutrients while reducing the risk of chronic diseases. Although the recommendations are presented as individual entities, it is stressed that they will be fully effective only when applied as a unit. It is also important to appreciate that the recommendations are not a prescription and they can be satisfied by many combinations of available foods without any general need of supplements.

Desired Characteristics of the Canadian Diet

The Canadian diet should provide energy consistent with the maintenance of body weight within the recommended range. Physical activity should be appropriate to circumstances and capabilities. Both longevity and the incidence of a number of chronic diseases are associated adversely with body weights above or below the recommended range. There is, thus, a health benefit to controlling weight, but a possible downside to control by energy intake alone; physical activity should also play a role. While the importance of maintaining some activity throughout life can be stressed, it is not possible to specify a level of physical activity appropriate for the whole population. As a general guideline it is desirable that adults, for as long as possible, maintain an activity level that permits an energy intake of at least 1800 kcal or 7.6 MJ/day while keeping weight within the recommended range.

The Canadian diet should include essential nutrients in amounts recommended in the SRC report. One of the reasons for including physical activity as a desirable element in weight control is the increasing difficulty in meeting the recommended nutrient intake (RNI) as energy intake falls below about 1800 kcal or 7.6 MJ/day. While it is important that the diet provide the recommended amounts of nutrients, it should be understood that no evidence was found that intakes in excess of the RNIs confer any health benefit. There is no general need for supplements except for vitamin D for infants and folic acid during pregnancy. Vitamin D supplementation might be required for elderly persons not exposed to the sun, and iron for pregnant women with low iron stores. It should be noted that while the habitual intake of certain nutrients, eg. protein and vitamin C, greatly exceeds the RNI, there is no reason to suggest that present intakes be reduced.

The Canadian diet should include no more than 30% of energy as fat (33 g/1000 kcal or 39 g/5000 kJ) and no more than 10% as saturated fat (11 g/1000 kcal or 13 g/5000 kJ). Diets high in fat have been associated with a high incidence of heart disease and certain types of cancer and a reduction in total fat intake is an important way to reduce the intake of saturated fat. The evidence linking saturated fat intake with elevated blood cholesterol and the risk of heart disease is among the most persuasive of all diet/disease relationships and was an important factor in establishing the recommended dietary pattern. Dietary cholesterol, though not as influential in affecting levels of blood cholesterol, is not without importance. A reduction in cholesterol intake normally will accompany a reduction in total fat and saturated fat. The recommendation to reduce total fat intake does not apply to children under the age of two years.

The Canadian diet should provide 55% of energy as carbohydrate (138 g/1000 kcal or 165 g/5000 kJ) from a variety of sources. Sources should be selected that provide complex carbohydrates, a variety of dietary fibre and β-carotene.

Carbohydrate is the preferred replacement for fat as a source of energy since protein intake already exceeds requirements. There are a number of reasons why the increased carbohydrate calories should be in the form of complex carbohydrates. Diets high in complex carbohydrates have been associated with a lower incidence of heart disease and cancer, and are sources of dietary fibre and of β-carotene.

The sodium content of the Canadian diet should be reduced. The present food supply provides sodium in an amount greatly exceeding requirements. While there is insufficient evidence to support a quantitative recommendation, potential benefit would be expected from a reduction in current sodium intake. Consumers are encouraged to reduce the use of salt (sodium chloride) in cooking and at the table, but individual efforts will be relatively ineffective unless the food industry makes a determined effort to reduce the sodium content of processed and prepared food. A diet rich in fruits and vegetables will ensure an adequate intake of potassium.

The Canadian diet should include no more than 5% of total energy as alcohol, or two drinks daily, whichever is less. There are many reasons to limit the use of alcohol. From the nutritional point of view alcohol dilutes the nutrient density of the diet and can undermine the consumption of RNIs. The deleterious influence of alcohol on blood pressure provides a more urgent reason for moderation. During pregnancy it is prudent to abstain from alcoholic beverages because a safe intake is not known with certainty.

The Canadian diet should contain no more caffeine than the equivalent of four regular cups of coffee per day. This is a prudent measure in view of the increased risk for cardiovascular disease associated with high intakes of caffeine.

Community water supplies containing less than 1 mg/litre should be fluoridated to that level. Fluoridation of community water supplies has proven to be a safe, effective and economical method of improving dental health.

Appendix C

**Report of the Task Group on Canada's Food Guide:
Executive Summary**

Report of the Task Group: Executive Summary

The report of the Task Group on *Canada's Food Guide* is a working document in support of the work of the Communications/ Implementation Committee, Health and Welfare Canada, for the review of Nutrition Recommendations for Canadians. Recommendations of the Task Group were submitted to the Communications/ Implementation Committee to assist them in translating scientific statements into dietary advice for the public. The mandate and membership list of the Task Group are provided in Appendix I of the report.

Canada's Food Guide

Canada's Food Guide, initially known as *Canada's Official Food Rules*, was developed in 1942 and revised over the years to serve as a basis for nutrition education programs in all Canadian provinces and territories. It is a guide which visually depicts how consumers can meet nutrient needs by following a daily pattern of food selection.

Review of Canada's Food Guide

Canada's Food Guide has been revised in both name and content over the years. The 1942 *Canada's Official Food Rules* were renamed *Canada's Food Rules* in 1944. In 1961, the publication became *Canada's Food Guide*. Major revisions to the content of the Guide were made in 1961, 1977 and 1982 to reflect advances in the knowledge of dietary requirements and nutrition education techniques, as well as changes in the Canadian food supply.

Since 1982, knowledge of dietary requirements has increased, and food consumption patterns continue to evolve in a changing marketplace. More is also known about chronic nutrition-related diseases, sparking interest in food in connection with specific chronic diseases, such as heart disease and cancer. Consequently, Health and Welfare Canada has undertaken to revise the Nutrition Recommendations for Canadians. As key concepts of the latter are expressed in *Canada's Food Guide*, a review of the Guide was deemed essential to this task.

Recommendations of the Task Group on Canada's Food Guide

The present *Canada's Food Guide* is an educational tool of great value to consumers and communicators of nutrition information. In reviewing the Guide, members of the Task Group decided that several features of the present Guide should be retained. These include:

- the food group classification system, in which foods are grouped by nutrient contribution and by consumer-acceptable commodity type;
- variety, as depicted by diversity in examples of foods within each food group;
- daily food selection recommendations; and
- the present method of distribution and copyright of the Guide by Health and Welfare Canada.

However, the Task Group also recommended changes to the Guide. Members of the Task Group on *Canada's Food Guide* submit the following recommendations, all of which are considered of equal importance, to the Communications/ Implementation Committee.

Recommendations related to the development of a food guidance system:

1. *Canada's Food Guide* should be based on a total diet approach that promotes dietary adequacy while integrating the most current Nutrition Recommendations.

2. The statement of purpose for *Canada's Food Guide* should read: "*Canada's Food Guide* is a realistic framework to assist healthy Canadians over two years of age in selecting foods to promote dietary adequacy."

3. *Canada's Food Guide* may be used:
   - for planning and selecting foods to promote health maintenance and risk reduction of chronic diet-related diseases among healthy Canadians over two years of age;
   - as a guideline or reference standard for legislation for institutional food services;
   - by individuals, to provide a general assessment only of their dietary intake; and
   - as an educational tool targeted to the needs of specific groups.
4. To ensure widespread use of the food guide, foods contained in it should be readily accessible, affordable and acceptable to consumers. A variety of foods should be displayed within each food group to promote maximum acceptability of the Guide.
5. A new title should be considered for *Canada's Food Guide*, in accordance with results of consumer research studies. The research should investigate desirability of retaining "Canada's Food Guide" as part of the title.
6. *Canada's Food Guide* should retain a food group classification system that considers the current four food groups and emphasizes foods that best meet up-to-date nutrition recommendations. Consumer research should be done on the following:
   - What criteria should be used to classify foods in the Guide?
   - How valid is the Guide in suggesting food selections that promote dietary adequacy for each age and physiological group?
   - How can convenience foods, mixed foods and foods consumed away from home be classified in the Guide?
7. Recommended serving sizes in the context of the total diet approach of *Canada's Food Guide* should be based on consumer dietary practices. The number of servings should be determined according to the Recommended Nutrient Intakes for Canadians and the revised Nutrition Recommendations. It may be necessary to modify serving sizes or numbers to meet the nutritional needs of some users. For example, serving sizes for children should be smaller while the number of recommended servings for pregnant and lactating women should be greater.
8. *Canada's Food Guide* should continue to base its suggestions on a daily food intake. The Guide should contain a note stating that day-to-day variations in intakes are normal and not harmful.
9. Foods in *Canada's Food Guide* should not be limited to those produced locally, in order to maintain the greatest possible variety within the Guide and to minimize unrealistic changes in dietary habits.

Recommendations related to the implementation of a food guidance system:

1. In order to determine an effective visual presentation for *Canada's Food Guide*, consumer research should be done and appropriate design and communication expertise sought. The design chosen should be simple, clear and adaptable and the text positive, straightforward and comprehensible.
2. Health and Welfare Canada should continue to hold copyright for *Canada's Food Guide* and distribute it free of charge.
3. *Canada's Food Guide* should serve as the core educational tool in a comprehensive food guidance system. It should be adaptable to specific target groups and supported by existing materials such as the Handbook (revised accordingly) as well as by new support materials.

4. A marketing and communication strategy should be developed to effectively relay *Canada's Food Guide* messages to consumers and communicators of nutrition information.

Recommendation related to the evaluation of a food guidance system:

1. Canada's food guidance system should be evaluated periodically (every five years or as necessary) among consumers and communicators of nutrition information, employing formative and summative evaluation methods.

Appendix D

**Report of the Technical Group on Canada's Food Guide:
Executive Summary**

Report of the Technical Group: Executive Summary

The report of the Technical Group on *Canada's Food Guide* is a working document in support of the work of the Communications/Implementation Committee, Health and Welfare Canada, for the review of Nutrition Recommendations for Canadians. Recommendations of the Technical Group are submitted to the Communications/ Implementation Committee. The mandate and membership list of the Technical Group are provided in Appendix I of the report.

Health and Welfare Canada has undertaken to revise the Nutrition Recommendations for Canadians to ensure that these recommendations continue to promote and maintain health while reducing the risk of nutrition-related diseases. As part of the process of translating the revised recommendations into dietary advice for Canadians, Health and Welfare Canada appointed a task group to review *Canada's Food Guide*, the key nutrition education tool in Canada (Health and Welfare Canada, 1982). To further support the work of the Communications/Implementation Committee in recommending changes to *Canada's Food Guide*, a technical group was formed to assess the practical implications of shifting from a foundation to a total diet food guide and the nutritional adequacy of the Guide according to the revised Nutrition Recommendations.

In fulfilling its mandate, the Technical Group developed a food guide, referred to as the Base Food Guide, by defining a food classification system, establishing nutrient criteria for each food group, and specifying numbers and sizes of food servings. Initial steps were taken to establish acceptable ranges in the number of food servings for various physiological groups. In order to comply with the Base Food Guide, Canadians will have to make changes in their eating habits. The Base Food Guide will also have an impact on the food supply, and will require the development of educational programs.

Based on the analyses, the Technical Group for the Review of *Canada's Food Guide* submits the following recommendations to the Communications/Implementation Committee:

1. The revised Food Guide, based on a daily total diet approach, should include the four original food groups, plus an additional fats and sweets group.

2. Names of all five food groups should be re-examined.

3. The Base Food Guide should be adopted as the basis for modifying *Canada's Food Guide* to reflect a total diet approach. The number of servings for each food group, along with key nutrient criteria per serving, are as follows:

   - milk and milk products: 2 servings (each based on 300 mg calcium);
   - meat, fish, poultry and alternates: 3 servings (each supplying 12 g protein);
   - fruits and vegetables: 6 servings, of which at least 2 must be vegetables (each supplying 50 R.E. vitamin A, 12 mg vitamin C or 11 mcg folacin);
   - breads and cereals: 6 servings (each supplying 0.06 mg thiamin or 0.65 mg iron);
   - fats and sweets: the number of servings for an 1800 kcal (7600 kJ) diet should not exceed the *equivalent* of 20 mL (4 tsp) of fat and 40 mL (8 tsp) of sugar.

4. Adaptations to the Base Food Guide to satisfy the Nutrition Recommendations for various physiological groups should be expanded to form the basis for ranges in the number of servings.

5. The key messages of the Food Guide should encompass the concepts of energy balance, promoting growth in children, maintaining health and reducing the risk of chronic disease. They should stress daily variety within and among food groups.

6. Statements addressing water intake and alcohol consumption should be included in the revised Food Guide.

7. Further investigation of preschoolers' intakes should be undertaken in order for the Food Guide to encompass specific requirements based upon the dietary habits of this group.

8. Educational materials and programs should be developed for professionals, the food and food services industries and the public to facilitate adherence to the revised Food Guide. Such material should contain the rationale for changes in the Food Guide and outline adjustments required to permit occasional use of high-fat food items within the context of the Nutrition Recommendations.

9. The agricultural sector and the food and food services industries should be stimulated to respond to changes required in the food supply.

Appendix E

**Report of the Task Group on Food Consumption:
Executive Summary**

Report of the Task Group on Food Consumption: Executive Summary

The Task Group on Food Consumption was ..blished to provide information on food consumption patterns and the distribution of nutrients in the Canadian food supply, to relate this information to the updated Nutrition Recommendations provided by the Scientific Review Committee (SRC), and to predict the impact of revised nutrition recommendations on the food supply and the development of new products.

Energy and ten nutrients were identified as being of public health significance, and six major databases were accessed in addressing the issues identified.

Food and nutrient consumption trends from 1972 to 1986 were itemized. These changes were attributed to shifts in demographics, variations in relative prices of foods, changes in disposable income, shifts in tastes and preferences and changing health concerns.

Any changes in the Nutrition Recommendations for Canadians proposed by the SRC will have a profound and varied impact on how Canadians deal with food. Because of this, a multisectoral approach will be required to facilitate compliance. Revised recommendations may dictate drastic changes in food choices by consumers, breeding practices and/or choice of species, cultivar, etc. by producers and the development of new specialized products and/or improved preservation techniques by the food industry. This was illustrated by using as an example the combination of a recommendation to decrease the percentage of energy derived from fat and a recommendation to increase the consumption of complex carbohydrates.

The need for a national nutrition monitoring and surveillance system was identified, as was the need for greater emphasis on nutrition education programs for Canadians.

Appendix F

**Summary Highlights of
Focus-group Research:
Communicating Nutrition Concepts**

Summary Highlights of Focus-group Research

Background

The focus-group research was conducted in support of the work of the Communications/ Implementation Committee to assist in the translation of Nutrition Recommendations for the public and the review of and revisions to *Canada's Food Guide*.

A key step in implementing nutrition information is insuring that it will be understood by the public. Therefore, the Department of National Health and Welfare commissioned The Creative Research Group Ltd. to determine if the Nutrition Recommendations for Canadians are pertinent to the needs of the target population, easy to understand, motivational and accessible.

Purpose of the Study

The objectives of the research were to:

1) provide insight into public reactions to the Nutrition Recommendations for Canadians;

2) see how these recommendations fit into the public's current attitudes and behaviours vis-a-vis their diet; and

3) determine how well these recommendations are understood.

The research was also designed to assist the Department to select appropriate terminology and methods of presenting nutrition information and material.

Target Population

The target groups are single mothers aged 20 to 35 years in low- to middle-income groups and men and women aged 35 to 49 years in the same income groups who have children living at home.

Methodology

Eight discussion groups, five English and three French, were held during April 1989. Three groups consisted of single mothers (as previously described) and the other five groups of men and women aged 35 to 49 (as previously described). Within the latter groups, both men and women had direct and habitual involvement with the purchasing of foods for the household.

Participants were randomly selected by a telephone-screening questionnaire. Those individuals meeting the criteria were asked to participate in a focus group in their region. Discussion groups were held in Kelowna, British Columbia; Saskatoon, Saskatchewan; Kingston, Ontario; Rimouski, Quebec; and Moncton, New Brunswick.

Highlights of Findings

During the discussion groups, issues such as the following were discussed: attitudes toward health; background information/food shopping; current eating habits; nutritional values; health statements; and *Canada's Food Guide* (current), terminology and methods of presentation. Because of the nature of the study design, the findings should be viewed as hypotheses rather than definite conclusions.

Attitudes Toward Health

Health is perceived to be relatively important to everyone, but particularly to the three Francophone groups and the Saskatoon group. In general, health increases in priority with age and with incidence of health problems.

Background Information/Food Shopping

Francophone respondents plan food purchases more as a family and are greater users of shopping lists than are English-speaking parents. Flyers (that is, store specials) serve as a major impetus to planned shopping for English-speaking parents, to the extent that they plan.

The price of meat, fish, and fruits and vegetables in the off-season is a limiting factor for families with more serious financial constraints.

Current Eating Habits

Most family members eat three meals per day, although some English-speaking mothers tend to skip meals, particularly breakfast. Everyone claims to eat from the four basic food groups every day. Many adults are conscious about providing nutritious food for their children, and yet often indulge in dietary habits they believe are unhealthy.

Nutritional Values

Everyone agrees nutrition is important to them and believes that their eating habits have changed since they were young and single.

Although not consistent, there is an overall trend towards reduced fat, increased consumption of fruits and vegetables and moderate sugar intake among all of the groups. English-speaking respondents are more likely to reduce salt and sweets.

The only universally accepted "good" eating habit is moderation. However, most respondents see fat as something that could be reduced, and fruits, vegetables and fibre as healthy dietary elements.

The media is an important source of nutritional information for both French- and English-speaking respondents; however, Anglophones are more likely to seek nutrition information from a professional, such as a doctor or a dietitian.

Health Statements

The following statements were developed for testing. They were designed to convey the latest nutrition recommendations in various styles of presentation.

1) "Reduce fats and increase fibre intake for better health/*Pour être en meilleure santé, mangez moins de matières grasses et plus de fibres alimentaires.*"

2) "Eat sensibly to prevent disease/*Bien manger pour prévenir les problèmes de santé.*"

3) "Reduce your fat intake to thirty percent of calories/*Diminuez les matières grasses à 30 p. 100 des calories que vous consommez.*"

4) "Lower fat and increase complex carbohydrates for better nutrition/*Pour une meilleure alimentation, mangez moins de matières grasses et plus de glucides.*"

5) "You are what you eat/*On est ce qu'on mange.*"

6) "Eat for health/*Mangez pour être en bonne santé.*"

The first statement is the most favourably received and the most motivating statement among both English- and French-speaking respondents. Many are interested to know which foods contain fat and which contain fibre.

Statements 3 and 4 are not well received by either Francophone or Anglophone respondents, as almost no respondents understand what complex carbohydrates are, nor do they know how to calculate the percent of calories from fat.

English-speaking respondents felt "Help prevent illness" is more appealing and less absolute than "to prevent disease". "Better health" is also preferred to "Better nutrition". Statements 5 and 6 were rejected by all respondents.

Overall, the most motivating and comprehensive phrases to English-speaking respondents seem to be: "Eat sensibly"; "Better health"; "Help prevent illness" and "Reduce fats and increase fibre".

French-speaking respondents reacted positively to *"Bien manger"* and *"Mangez moins de matières grasses et plus de fibres alimentaires"*.

Terminology

The most appealing, motivating and comprehensible terms evaluated by the Anglophone respondents are: "Balance", "Sensible", and "Increase/Decrease". *"Modération"*, *"Équilibré"* and *"Augmenter/Diminuer"* were preferred by French-speaking respondents.

The following are other findings regarding terminology:

English-speaking respondents:

- "food energy" is preferred to "calories",
- "milk/milk products" is strongly related to "calcium",
- "roughage" is not an appetizing or pleasing term, and
- "water" is more appealing than "fluid".

French-speaking respondents:

- *"énergie"* is related to physical energy; not food energy,
- *"calories"* is a familiar, understandable term,
- *"lait/produits laitiers"* is understood to include other products such as yogurt and cheese, and
- *"liquide"* is a very clear word.

Neither French- nor English-speaking respondents accurately understand the difference between dietary (*cholestérol alimentaire*) and serum (*taux de cholestérol*) cholesterol. "Complex carbohydrates"/*"glucides"* are also quite confusing terms. All groups relate fibre to breads and cereals, but few include fruits and vegetables as sources of fibre.

Canada's Food Guide

Most respondents had heard of *Canada's Food Guide*, but only three of the eight groups were familiar enough with the Guide to draw it.

Low estimates of number of servings were given for the breads and cereals group.

Use of *Canada's Food Guide* appeared to be limited to ensuring that respondents eat from each food group every day; however, the portions recommended are ignored.

Respondents are highly comfortable with *Canada's Food Guide*, as the visual presentation and format of the Guide are familiar and easy to understand.

Methods of Distribution

Many respondents feel it is important to distribute the Guide to children because it influences parents as well as children.

Various other suggestions include mail, pamphlets in grocery stores, documentaries, seminars and cookbooks. Distributing the Guide through the media in a news or article context is an idea that fits the lifestyles of respondents.

Implications

It is easiest to reach and communicate nutrition concepts to those who already have some knowledge on the subject of nutrition. These people have generally been interested in nutritional issues in the past and are interested in learning more. Consequently, they are the least in need of nutrition information, as they most closely comply with the Nutrition Recommendations. The most difficult people to reach, and the least receptive to any new recommendations, are those who have not actively sought information on nutrition in the past.

It is important for everyone to feel they are providing good nutrition to their families. Thus, people feel somewhat defensive about guidelines or restrictions that contradict their current beliefs or habits. Communications addressed to them should invite them to eat nutritiously in an appealing and positive manner and should not be aggressive or critical in tone.

Awareness of the existence of *Canada's Food Guide* with its four food groups is high, but not complete. Awareness of *Canada's Food Guide*, as

well as current nutrition recommendations, could be improved through wider and more diverse distribution methods.

Those aware of the current food guide are highly comfortable with it, making them resistant to dramatic changes in the Guide. Based on the research, it was recommended that the circle format and pictures be maintained both for their familiarity and their communication value. Some suggested improvements on *Canada's Food Guide* include clearer pictures (possibly photographs) and pie slices proportional to the number of servings suggested.

Terminology and phrasing should be kept simple, practical and positive.

In order to implement recommendations to increase fibre and reduce fat, it is necessary to first educate the public on which foods are high in fibre and which are high in fat.